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Biological Assessment

# Sloughhouse Solar Project

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OCTOBER 2022

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# Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AC	Alternating Current
Action Area	Project Study Area (PSA)
AMM	Avoidance and Minimization Measure
Applicant	Sloughhouse Solar, LLC
BA	Biological Assessment
BMP	Best Management Practice
BO	Biological Opinion
CFR	Code of Federal Regulations
CWA	Clean Water Act
DC	Direct Current
DCH	Designated Critical Habitat
EFH	Essential Fish Habitat
FESA	Federal Endangered Species Act
IPaC	Information for Planning and Conservation
NWW	Non-Wetland Waters
OHWM	ordinary high-water mark
Project	Sloughhouse Solar Project
Proposed Action	Sloughhouse Solar Project (Project)
PSA	Project Study Area (Action Area)
PV	Photovoltaic
SMUD	Sacramento Municipal Utility District
SSHCP	South Sacramento Habitat Conservation Plan
SLLC	Sloughhouse Solar, LLC
State	State of California
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WEAP	Worker Environmental Awareness Training



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# 1 Executive Summary

Sloughhouse Solar, LLC (Applicant) is proposing construction and operation of the Sloughhouse Solar Project (Project), a solar PV energy-generating facility adjacent to an existing solar energy facility located in the Sloughhouse community of Sacramento County, California. A Project Study Area (PSA) of 732.26 acres was evaluated for this Biological Assessment (BA). The PSA comprises the Action Area, which comprises the Solar Development Area (i.e., the area direct or indirectly affected by the federal action) of 371.72 acres, in addition to the remaining areas outside of the Solar Development Area but within the Action Area, which will be referred to herein as “Adjacent Other Lands” of 360.54 acres. For the Action Area, this BA analyzes the preferred environmental alternative site plan dated June 2022 (DESRI 2022).

In accordance with the 50 Code of Federal Regulations (CFR) 402.14(c), this document provides the necessary information in support of the U.S. Department of Agriculture (USDA) request to initiate Formal Consultation with the U.S. Fish and Wildlife Service (USFWS) and request their Biological Opinion (BO) for potential affects to three federally listed species and their habitat, vernal pool fairy shrimp (*Branchinecta lynchi*), vernal pool tadpole shrimp (*Lepidurus packardii*), and valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*). The USDA is the lead federal action agency regarding the consultation pursuant to 50 C.F.R. § 402.07. This document will also serve as the BA regarding the actions of the U.S. Army Corps of Engineers (USACE) for the Project.

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## 2 Introduction

In accordance with the 50 Code of Federal Regulations (CFR) sections 402.12 and 402.14(c), this Biological Assessment (BA) was prepared for the Sloughhouse Solar Project (Project or Proposed Action) to provide the necessary information in support of the U.S. Department of Agriculture's (USDA) request to initiate Formal Consultation with the U.S. Fish and Wildlife Service (USFWS) and request their Biological Opinion (BO) for potential effects to three federally listed species, vernal pool tadpole shrimp, vernal pool fairy shrimp, and valley elderberry longhorn beetle.

### 2.1 Purpose of Biological Assessment

The purpose of this BA is to provide the USFWS with the information required for the preparation of a BO. This BA describes the potential direct, indirect, and temporary effects of the proposed Project on the federally listed vernal pool tadpole shrimp, vernal pool fairy shrimp, and valley elderberry longhorn beetle in accordance with Section 7 of the Federal Endangered Species Act (FESA). This BA is provided in support of USDA's request for the initiation of Formal Consultation with the USFWS for the incidental take (defined below) of vernal pool tadpole shrimp and vernal pool fairy shrimp, and on designated or proposed critical habitat for these species. The geographic scope of this BA encompasses a Project Study Area (PSA), or Action Area, of 732.26 acres. The Action Area has been defined based on the areas that may be directly and/or indirectly affected by the Proposed Action. Specifically, the Action Area encompasses the entire geographic area whereby the Proposed Action will directly and indirectly affect physical, chemical, and biological resources. Additionally, solar development is limited to the Action Area and has minimal impacts beyond the Solar development area. For the Proposed Action, the Action Area comprises the Solar Development Area (i.e., the area direct or indirectly affected by the federal action) of 371.72 acres, in addition to the remaining areas outside of the Solar Development Area within the Action Area, which will be referred to herein as "Adjacent Other Lands" of 360.54 acres (Figures 1-3; Appendix A). The Action Area was originally defined based on the maximum extent of the landowner parcels. These areas were initially surveyed to locate a site for the Solar Development Area that would reduce environmental impacts to the maximum extent possible, as well as to determine if areas within the parcels had the potential to be used for mitigation purposes. The area to the east of the Action Area was not included as part of the Action Area because it lacks aquatic resources within proximity to the Proposed Action and will not yield any direct or indirect impacts. For the Action Area, this BA analyzes the final preferred environmental alternative site plan dated June 2022 (DESRI 2022). Specifically, this BA has been prepared in compliance with legal requirements set forth under 50 C.F.R. sections 402.12 and 402.14, and Section 7(b) of FESA with the following objectives:

- Provide the best available scientific and commercial data and information to USFWS about the species and habitats addressed in this BA and how they may be affected by the Proposed Action, including consideration of cumulative effects.
- Determine whether the species addressed in this BA are likely to be adversely affected by the Proposed Action.
- Determine if designated or proposed critical habitat would be adversely modified by the Proposed Action.

- Describe conservation measures for the Proposed Action that would avoid or minimize its effects on these species and their habitats.

## 2.2 Consultation Considerations

### 2.2.1 Species Considered

An official list of federally listed species that may be present within 5 miles of the Action Area was obtained from the USFWS Information for Planning and Conservation (IPaC) database in July 2022 (USFWS 2022a) (Appendix B). The following eight federally endangered and threatened species were included on the USFWS species list and were considered for inclusion in this BA based on their potential for occurrence and effects of the action:

- Wildlife
  - California tiger salamander (*Ambystoma californiense*)—threatened.
  - Steelhead (*Oncorhynchus mykiss*)—threatened.
  - Giant garter snake (*Thamnophis gigas*)—threatened.
  - Valley elderberry longhorn beetle—threatened.
  - Vernal pool fairy shrimp—threatened.
  - Vernal pool tadpole shrimp—endangered.
- Plants
  - Sacramento Orcutt grass (*Orcuttia viscida*)—endangered.
  - Slender Orcutt grass (*Orcuttia tenuis*)—threatened.

The USFWS IPaC database results also identified critical habitats for vernal pool fairy shrimp, vernal pool tadpole shrimp, Sacramento Orcutt grass, and Slender Orcutt grass (USFWS 2022a) (Appendix B, Figure 8).

### 2.2.2 Species Eliminated

Based on the lack of known occurrences, the Proposed Action will have “no affect” and/or will “not likely to adversely affect” the federally listed species described below. Therefore, these species have been eliminated in this BA and no further evaluation or consultation on these species is needed (50 Code of Federal Regulations [CFR] 402.12).

- California tiger salamander- The Action Area is within the range of the California tiger salamander; the nearest occurrence of this species was determined to be approximately 5 miles from the Action Area, beyond the dispersal distance for the species. Few to no suitable burrows were identified during surveys,

and no California tiger salamander or larvae were detected during focused surveys (SLLC 2022a) (Appendix G).

- **Steelhead-** The Action Area does not contain suitable habitat for spawning and rearing steelhead, as it lacks necessary shade, suitable spawning substrate, and shallow, riffled waters; however, does contain potential migration habitat/corridor. This species has known occurrences within the small portion of the Cosumnes River that runs along the west side of the Action Area. The Consumes River that runs along the western boundary of the Action Area is hydrologically separated by a large levee from all areas to the east (i.e., the remaining Adjacent Other Lands and the Solar Development Area). As such, this species has been eliminated from this consultation because there will be no indirect, temporary, or direct impacts to the steelhead or their habitat (SLLC 2022a) (Appendix G).
- **Giant garter snake-** The Action Area is not within the current range of giant garter snake. Giant garter snake has not been documented in the vicinity of the Action Area and the habitat in the Action Area is of low quality. There are no known occurrences within 5 miles of the Action Area (SLLC 2022a) (Appendix G).
- **Sacramento Orcutt and Slender Orcutt grasses-** Reference population checks were performed for special-status plant species on April 22, 2021, and protocol-level botanical field surveys were conducted within the Action Area on May 4, 2021. The Action Area is within the known range of Sacramento Orcutt Grass and slender Orcutt grass, and low quality suitable habitat for the species is present. Specifically, the low quality suitable habitat for this species is located throughout the Action Area within the vernal pools, wetland swales, and seasonal wetlands. Designated Critical Habitat (DCH) is located approximately 4 miles northwest of the Action Area. There are also known occurrences for this species within 5 miles of the Action Area, including locations off Kiefer Boulevard near the intersection with Grant Line Road. No Sacramento Orcutt grass or slender Orcutt grass was observed during protocol-level botanical surveys (SLLC 2022a) (Appendix G).

### 2.2.3 Designated Critical Habitat

USFWS has DCH for special-status invertebrate species vernal pool fairy shrimp and vernal pool tadpole shrimp (SLLC 2022) (Appendices B and G). DCH for vernal pool fairy shrimp and vernal pool tadpole shrimp have both been identified within 5 miles of the Action Area, with the closest located approximately 1.3 miles southeast of the Action Area (Figure 8). Protection and recovery requisites for these species are detailed in the *2005 Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (USFWS 2005a). These species have an ephemeral life cycle and exist only in vernal pools or vernal pool-like habitats, such as those occurring within the Action Area. The overarching recovery strategy for these species is habitat protection and management (USFWS 2005a).

### 2.2.4 Species Requiring Consultation

Of the 8 federally listed species considered for inclusion in this BA, three species, vernal pool fairy shrimp, vernal pool tadpole shrimp, and valley elderberry longhorn beetle have been considered for potential effects within the Action Area and are therefore the subject species assessed within this BA.

## 2.2.5 Consultation to Date

Pursuant to FESA, USDA must consult with USFWS regarding any proposed actions USDA authorizes that may affect the continued existence of a federally listed species. No formal consultation on the Proposed Action between USDA and USFWS has occurred to date.

**Table 1. Summary of Consultation to Date, Sloughhouse Solar Project**

Date	Attendance / Recipients	Consultation / Correspondence Notes
12.2020	Michelle Havens (USFWS), Morgan Kennedy (Dudek), Daniel Menahem (SLLC)	Meeting #1: Pre-application meeting request
01.20.2021	Rocky Montgomery, Michelle Havens (USFWS); Robert Ferrara, Daniel Menahem (SLLC); Morgan Kennedy, Laura Burris, Michael Henry (Dudek)	Meeting #1: Initial pre-application meeting, Project introductions
02.11.2021	Samantha Lantz (USFWS), Morgan Kennedy (Dudek), Daniel Menahem (SLLC)	Submittal: 90-Day Report for Dry Season surveys submitted for Federally Listed Branchiopods
03.04.2021	Samantha Lantz (USFWS), Morgan Kennedy (Dudek), Daniel Menahem (SLLC)	Submittal Confirmation: 90-Day Dry Season Protocol Survey Letter Report for Federally Listed Branchiopods
07.29.2021	Samantha Lantz (USFWS), Morgan Kennedy (Dudek), Daniel Menahem (SLLC)	Submittal: 90-Day Wet Season Protocol Survey Letter Report for Federally Listed Branchiopods
07.29.2021	Samantha Lantz (USFWS), Morgan Kennedy (Dudek), Daniel Menahem (SLLC)	Submittal Confirmation: 90-Day Wet Season Protocol Survey Letter Report for Federally Listed Branchiopods
10.11.2021	Michelle Havens (USFWS); Daniel Menahem, Clark Skillman (SLLC); Morgan Kennedy (Dudek)	Meeting #2: Pre-application follow-up meeting request sent
10.25.2021	Michelle Havens (USFWS); Daniel Menahem, Clark Skillman (SLLC); Morgan Kennedy (Dudek)	Meeting #2: Pre-application follow-up meeting request sent
11.22.2021	Ian Perkins-Taylor (USFWS), Allison Little (Sacramento County)	Received comments from the Sacramento County Notice of Preparation
12.15.2021	Michelle Havens, Ian Perkins-Taylor (USFWS); Daniel Menahem (SLLC); Morgan Kennedy, David Hochart (Dudek)	Meeting #2: Pre-application follow-up meeting
06.02.2022	Ian Perkins-Taylor, Emma Bickerstaff (USFWS); Matt Hirkala (USACE); Clark Skillman (SLLC); Morgan Kennedy, Laura Burris (Dudek)	Inter-agency site visit
06.29.2022	Ian Perkins-Taylor (USFWS); Clark Skillman (SLLC) Morgan Kennedy (Dudek)	Meeting #3: Mitigation discussion meeting request sent
07.07.2022	Ian Perkins-Taylor, Emma Bickerstaff (USFWS); Daniel Menahem, Clark Skillman (SLLC); Jim Gillum (Gillum Consulting); Morgan Kennedy (Dudek)	Meeting #3: Mitigation discussion meeting
07.2022	Elisa Albury, Jeffrey Larson (USDA); Clark Skillman (SLLC); Matt Hirkala (USACE); Morgan Kennedy,	Email introductions with USDA (federal lead)

**Table 1. Summary of Consultation to Date, Sloughhouse Solar Project**

Date	Attendance / Recipients	Consultation / Correspondence Notes
	David Hochart (Dudek); Steve Smith and Matthew Gerken (Aecom)	
07.12.2022	Elisa Albury, Jeffrey Larson (USDA); Clark Skillman (SLLC); Matt Hirkala (USACE); Morgan Kennedy, David Hochart (Dudek); Steve Smith and Matthew Gerken (Aecom)	Meeting #4: USDA, federal lead, coordination meeting with other federal agencies

**Notes:** SLLC= Sloughhouse Solar, LLC; USDA= U.S. Department of Agriculture, USACE= U.S. Army Corps of Engineers, USFWS= U.S. Fish and Wildlife Service.

On January 20, 2021, the Applicant conducted a formal pre-application meeting with the USFWS (i.e., meeting #1). The pre-application meeting introduced the Applicant and USFWS teams, the Project site, overarching Project objectives, and provided a background of known federally listed species that may be present within the Action Area. During this pre-application meeting the USFWS indicated a Project manager had not yet been assigned to the Project. Discussions regarding the applicability of the South Sacramento Habitat Conservation Plan (SSHCP) were reviewed, and the Project was determined not to be a covered activity. Lastly, the findings of the Protocol-Level Dry and Wet Season Survey Results for federally listed branchiopods were presented to the USFWS.

On December 15, 2021, the Applicant conducted a follow-up pre-application meeting with USFWS (i.e., meeting #2). This follow-up meeting included the attendance of the newly assigned Ian Perkins-Taylor as the USFWS Project manager for the Project. Mr. Perkins indicated at this time that the USFWS would assume presence for federal large-listed branchiopods within the Action Area, even with the negative protocol-level survey results conducted in the dry and wet seasons of 2020 and 2021. A review of the Project and updated site plans to date were reviewed, as well as discussions regarding the process for moving forward with a formal Section 7 Consultation.

On June 2, 2022, the Applicant team met with both the USFWS and the USACE for a site visit of the Action Area. The entirety of the site and surround area was visited. Aquatic resources were reviewed to assess for suitability of habitat for federally large-listed branchiopod species. In addition, discussions were initiated to evaluate the best approaches for compensatory mitigation for the Project.

On July 12, 2022, the Applicant team met with the USFWS, the USACE, and the USDA, the federal lead agency, to discuss each federal agency's role. The USDA led the discussion and provided feedback on the process and timing for submittal and permit reviews.



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## 3 Description of Proposed Action

### 3.1 Overview

The Proposed Action is a solar photovoltaic (PV) energy-generating facility located on the southwest corner of Meiss Road and Dillard Road, adjacent to an existing solar energy facility located at 7794 Dillard Road, Sacramento County, California. The Project is being proposed to be developed by the Applicant to sell its electricity and all renewable and environmental attributes to Sacramento Municipal Utility District (SMUD) under long-term contracts to help meet California Renewables Portfolio Standard goals. The Project Applicant would construct, operate, and decommission a solar generation and energy storage facility within the Solar Development Areas of approximately 371.72 acres (inclusive of solar field, energy storage, substation(s), roads, retention basins, etc.) within the greater 732.26-acre Action Area. The remaining 360.54 acres within the Action Area are being included in this BA to be referred to as Adjacent Other Lands (Figures 1-3, Appendix A). The design and construction of the buildings, solar arrays (panels, etc.), energy storage facilities, and auxiliary facilities will be consistent with Sacramento County building standards. During construction, a temporary construction trailer/office complex and staging areas would be established within the Action Area. At the end of the Project's life (anticipated to be 30 to 35 years or longer), the site would be decommissioned.

The Proposed Action will use PV technology to convert sunlight directly into direct current (DC) electricity. The process starts with PV cells that make up PV modules (environmentally sealed collections of PV cells). Groups of PV modules are wired together to form a PV array. The DC produced by the array is collected at inverters (power conversion devices) where the DC is converted to alternating current (AC). The voltage of the electricity is increased by a transformer at each power conversion station to a medium voltage level (typically 34.5 kilovolts). Medium voltage electric lines (underground and/or overhead) are used to collect the electricity from each medium voltage transformer and transmit it to the facility substation, where the voltage is further increased by a high voltage transformer to match the electric grid for export to the point of interconnection along Dillard Road. Disconnect switches, fuses, circuit breakers, and other miscellaneous equipment will be installed throughout the system for electrical protection and operations and maintenance purposes. The Proposed Action may include only one PV technology or a combination of various PV technologies, including but not limited to crystalline silicon-based systems, bifacial, thin-film systems, perovskites, and concentrating PV systems.

### 3.2 Layout

The Solar Development Area will include a powerline crossing of Dillard Road and access from Dillard Road. The Solar Development Area consists of a solar PV generating facility approximately 50 megawatts in size. The ultimate energy output is dependent on several variables, including offtake arrangements and the evolving efficiency of PV panels, so it is possible that the Project could generate more or less than 50 megawatts. Proposed Action construction will take approximately 8 months.

At full build-out, most of the Solar Development Area will be disturbed by construction of the Proposed Action. Temporary construction lay down, construction trailers, and parking areas will be provided within the Solar Development Area. Due to the size of the Solar Development Area, the solar field lay down areas may be relocated periodically within the solar field acreage as the Proposed Action is built out in phases.

The Solar Development Area may also include additional auxiliary facilities such as raw water/fire water storage, treated water storage, storm water retention basins, water filtration buildings and equipment, and equipment control buildings, septic system(s), and parking. The design and construction of the buildings, solar arrays (panels, etc.), energy storage facilities, and auxiliary facilities will be consistent with Sacramento County building standards.

## 3.2.1 Facilities

The Solar Development Area consists of a solar PV generating facility approximately 50 MW in size. The major components of the Solar Development Area facilities are described below.

### 3.2.1.1 PV Solar Modules

The Project will utilize PV modules. When sunlight strikes a PV module, the energy absorbed is transferred to electrons in the atoms of the semiconductor causing them to escape from their normal positions and become part of the current in an electrical circuit. The PV modules convert the sunlight directly into low-voltage DC electricity that is subsequently transformed to AC electricity through an inverter. The system only operates when the sun is shining during daylight hours. The system operates at peak output when the sunlight is most intense, though it also produces power in low light conditions.

### 3.2.1.2 Fixed-Tilt and Tracker Structures

Depending on the selected manufacturer for the PV modules, the modules will be mounted on fixed-tilt, single or dual-axis tracking structures. The modules will be grouped in nominal 1 to 2MW-AC arrays. Fixed tilt arrays will be oriented in east-west rows and will face in a generally southern orientation with a tilt angle between 10 and 35 degrees to maximize the amount of incidental solar radiation absorbed over the year. Single-axis trackers typically rotate  $\pm 60$  degrees (0 degrees is horizontal) along a nominally north-south axis to track the sun's movement throughout the day. Structural support elements will be constructed of corrosion-resistant steel, aluminum, or equivalent members that are attached to circular piers or I-beam posts that will be driven into the prepared base grade of the Solar Development Area.

### 3.2.1.3 Inverters and Pad-Mounted Transformers

At the center of each array is a power conversion station where inverters take the DC power output from the PV modules and convert it to AC power. The adjacent pad-mounted transformer steps the voltage up to a medium voltage level. The medium voltage outputs from each of the pad-mounted transformers are collected in combining switchgear located at discrete locations within the Solar Development Area. The medium voltage output from the combining switchgear will be connected to the Project substation within the Solar Development Area where it will then be stepped up to 69 kV for export to the grid. The solar array field is arranged in groups called "blocks." The entire array block is connected to an inverter and transformer station to convert the current from DC to AC and step up the voltage to a higher voltage which is more efficient for transmitting power to the substation.

### 3.2.1.4 Substation and Switchyard

An onsite substation will step-up the voltage from the collection level voltage to 69 kilovolts. Breakers, bus work, protective relaying, Supervisory Control and Data Acquisition (SCADA), and associated substation equipment will be constructed on the Solar Development Area. The communication system may include above or below ground fiber

optic cable or microwave tower. The Project will be interconnected to the regional transmission system from the onsite substation/switchyard via the gen-tie facilities described in this Description of Proposed Action.

### 3.2.1.5 Transmission Interconnection Facilities

The Project plans to connect to SMUD 69 kilovolt powerlines.

### 3.2.1.6 Energy Storage

The Solar Development Area will incorporate a battery energy storage facility as well as energy storage being housed within the inverters. The field of energy storage is rapidly advancing; thus, a single technology or provider has not been selected for the energy storage portion of the Project. The storage component may be centralized and located adjacent to the substation or switchgear, or alternatively, the energy storage component may be distributed throughout the plant adjacent to individual power conversion centers. The storage component would be housed in a warehouse type building or alternatively in smaller modular structures such as cargo shipping containers.

## 3.3 Construction and Operations

The following Project-systems will control, protect, and support the Proposed Action construction and its operation as described in the following in the sections below.

### 3.3.1 Temporary Construction Facilities

During construction, temporary facilities will be developed within the Solar Development Area to facilitate the construction process. These facilities may include construction trailers, temporary septic systems or holding tanks, parking areas, material receiving / storage areas, water storage ponds, construction power service, recycling / waste handling areas, and others. These facilities will be located at the construction areas designated on the final site plan.

### 3.3.2 Grading and Drainage

Site preparation will be planned and designed to minimize the amount of earth movement required for the Solar Development Area, to the extent feasible. Grading will consist of disc and roll compaction over the site. The hydrology design will be given priority to protect the Project's facilities and adjacent facilities from large storm events. It is the intent of the Project to support the panels on driven piles. Additional compaction of the soil to support the building and traffic loads as well as the PV module supports may be required and is dependent on final Project engineering design. Areas of significant compaction beneath the array are anticipated to be recompacted to foster vegetation growth following construction activities. The onsite drainage patterns will be maintained to the maximum extent practicable.

### 3.3.3 Water Use

The Project anticipates the use of existing on-site wells; however, some water may need to be hauled onsite dependent on water use needs in dry conditions. During construction within the Solar Development Area, water will be required for a variety of construction activities, including dust suppression, earth compaction, the creation of

engineered fill, and concrete preparation. Construction-phase water demand will be greatest during site grading which will consist of disc and roll compaction over the site. Approximately 96 acre-feet of water will be used for Solar Development Area dust control and other construction activities during the construction phase of the Proposed Action. The water used during operation will be used primarily for dust control. The Proposed Action may also use water to wash the solar modules should it be determined to be beneficial to the Project. The Proposed Action anticipates a requirement of approximately 2 acre-feet per year during plant operation (Dudek 2021).

### 3.3.4 Access / Traffic and Circulation

Access to the Solar Development Area will be from Dillard Road and Meiss Road. Access to components of the solar field will be controlled through security gates at several entrances. Multiple gate restricted access points will be used during construction and operation.

Proposed Action Construction is expected to take approximately 8 months. Daily trip generation during the Proposed Action construction would be from delivery of equipment and supplies and the commuting of the construction workforce. The number of workers expected onsite during Proposed Action construction would vary over the construction period and will average up to 150 workers per day. Deliveries of equipment and supplies to the site would also vary over the construction period but have the potential to range from 5 to 40 daily trips, averaging approximately 10 daily trips during the construction period. Parking for Proposed Action-related vehicles will be provided within the Solar Development Area during construction. The parking lot will move to adjacent phases as new phases are constructed. Based on the expected trips generated, traffic on the local roads would increase during construction but affects to current traffic patterns are anticipated to be minimal. No impact to current traffic patterns would result during operation of the Proposed Action. Operation of the site would be expected to generate approximately 4 to 10 trips per day from maintenance and security personnel.

### 3.3.5 Noise

Noise may be generated by equipment within the substation; typically, this includes switches, protection and control equipment, transformers, and the incoming transmission lines. The noise generated by transmission lines and switches has previously been analyzed to be 25 decibels at 50 feet. Transformers within the substation would generate noise levels like those at the inverters. Substation switches do not generate an audible noise, and circuit breakers (70 decibels at 65 feet) would not be a common noise source, as they would only operate for short periods of time during an emergency event to protect the switches and transformers within the substation. The project inverters will also generate noise. However, inverter noise decreases to background sound levels relatively quickly, and noise is anticipated to be essentially imperceptible at the fence line of the facility. Background sound levels are anticipated to dissipate within 50 to 150 feet of the facilities (MCEC 2012).

### 3.3.6 Electric Service

Permanent electric service will be obtained for auxiliary loads. Service will be provided by SMUD. Temporary electric service will be obtained for primary construction logistical areas. Generator power may be utilized for temporary portable construction trailer(s), construction and/or for commissioning.

### 3.3.7 Lighting System

The lighting system will provide operation and maintenance personnel with illumination in both normal and emergency conditions. Lighting will be designed to provide the minimum illumination needed to achieve safety and security objectives and will be shielded and oriented to focus illumination on the desired areas, minimizing light spillover.

### 3.3.8 Communications Systems

The Project will utilize telephone and internet services that will be provided via overhead or underground lines, microwave tower or via cellular service obtained from a local provider.

### 3.3.9 Employees

The Project would generate construction jobs. The number of workers on the site is expected to vary over the construction period. However, the number of construction workers onsite is expected to average up to 150 workers daily.

### 3.3.10 Security

To ensure the safety of the public and the facility, the property will be fenced, security lighting may be installed, and signs will be posted. Access to the site will be controlled, and gates will be installed at the roads entering the property. The fence will be monitored periodically to detect any intrusion into the property. The Project proposes to construct a chain link fence. Landscaping and entry monumentation will be maintained at the entrance to the Solar Development Area and along Dillard Road.

### 3.3.11 Hours of Operation

Typical construction work hours are expected to be from 6:00 am to 4:00 pm. However, the schedule may change based on a need to comply with various biological mitigation measures, overall construction timing, or worker safety such as avoidance of excessive midday heat. Work at night will be performed occasionally within limited areas of the site.

The facility would be operated remotely through a local solar operations and maintenance company.

## 3.4 Decommissioning Plan

The planned operational life of the facility is 35 years. The Project will be decommissioned in accordance with the Sacramento County approved Decommissioning Plan dated January 2021.

## 3.5 Schedule

Construction would take place over approximately 8 months, beginning May 2023 and ending in December 2023.

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# 4 Environmental Baseline

To assess the effects of a Proposed Action on federally listed species, the Section 7 implementing regulations require an analysis of how the Proposed Action may affect the environmental baseline (50 CFR 402.02). The environmental baseline provides information that USFWS uses to determine if the Proposed Action is not likely to jeopardize the continued existence of species being considered or result in the destruction or adverse modification of critical habitat. This section characterizes the environmental baseline of the Action Area and surrounding lands. The environmental baseline described below includes the effects of the past and existing uses within the Action Area (including the effects of the existing solar facility that is not part of the Project), and the anticipated impacts of all proposed Federal projects in the Action Area that have already undergone formal or early section 7 consultation.

## 4.1 Study Methods

### 4.1.1 Database and Literature Evaluation

A database and literature evaluation of federally listed special-status biological and aquatic resources present or potentially present within the Action Area. The database and literature evaluation assessed the Action Area vicinity, which specifically includes the general and nearby areas adjacent to the Action Area, not to exceed 5 miles. Resources and search parameters used during the desktop-level review include the following:

- *Aquatic Resources Delineation Report for the Sloughouse Solar Project (SLLC 2022b) (Appendix F; Figure 6). Rancho Seco Solar II Project in Sacramento County, California (U.S. Army Corps of Engineers Sacramento District 2016-00757) (USFWS 2019a).*
- SSHCP (Sacramento County 2018).
- SSHCP USFWS Incidental Take Permit (USFWS 2019b).
- USFWS *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (USFWS 1999).
- USFWS *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle* (USFWS 2022f).
- *BA prepared for Consultation with the USFWS for the Twin River Transit-Oriented Development and Light Rail Station Project* (City of Sacramento 2016).
- *BA prepared for the California Valley Solar Ranch Project* (HPR II LLC 2010).
- *Biological Technical Report for the Sloughouse Solar Project (SLLC 2022a) (Appendix G).*
- *BA prepared for the Rancho Seco Solar II Project (RSS II LLC 2018), and the BO Formal Consultation on the Rancho Seco Solar II Project in Sacramento County, California (USACE Sacramento District 2016-00757) (USFWS 2019a).*
- USFWS *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (USFWS 2005a).



- USFWS *Survey Guidelines for the Listed Large Branchiopods* (USFWS 2017).
- USFWS dry and wet season protocol survey letter reports for federally listed branchiopods (USFWS#2020-TA-3007) (SLLC 2021a-b) (Appendices D and F; Figures 8 and 9).
- Federal Emergency Management Agency National Flood Hazard Layer geospatial database (FEMA 2022) (Figure 5).
- National Oceanic and Atmospheric Administration Essential Fish Habitat (EFH) West Coast Data Inventory via ArcGIS (NOAA 2022) (Figure 8).
- Natural Resources Conservation Service Web Soil Survey (USDA 2022) (Figure 4).
- USFWS Environmental Conservation Online System Threatened and Endangered Species Active Critical Habitat Reports (USFWS 2022b).
- USFWS IPaC Trust Resource Report for the Action Area (USFWS 2022a) (Appendix A).
- USFWS National Wetlands Inventory Mapper of historical wetland data (USFWS 2022c) (Figure 5).
- USFWS species profiles for vernal pool fairy shrimp and vernal pool tadpole shrimp (USFWS 2022d-e).
- Western Regional Climate Center climate data (WRCC 2022).
- U.S. Geological Survey (USGS) National Hydrography Dataset to assess potential surface water features occurring in the Action Area vicinity (USGS 2022) (Figure 5).

## 4.1.2 Field Studies

The field studies detailed in the sections below are specific to the species assessed within this BA, vernal pool fairy shrimp, vernal pool tadpole shrimp, and valley elderberry longhorn beetle. Additional information pertaining to the federally listed species that have been eliminated from the BA for consultation can be reviewed in the *Biological Technical Report for the Sloughhouse Solar Project* (SLLC 2022a) (Appendix G).

### 4.1.2.1 Aquatic Resources Delineation

On behalf of the Applicant, Dudek conducted an aquatic resources field delineation within the Action Area on October 27, 29, and 30, 2020; November 4 and 9 through 13, 2020; and March 3, 2021. The purpose of the field delineation was to identify aquatic resources that may be potentially subject to agency jurisdiction pursuant to federal and state of California (state) regulations in Section 401 and 404 of the Clean Water Act (CWA), the Porter-Cologne Water Quality Control Act, California Fish and Game Code, California Environmental Quality Act guidelines, and that may provide habitat to federally listed branchiopod species. Aquatic resources within the Action Area were delineated based on methodology described in USACE's *Wetlands Delineation Manual* (USACE 1987) and the *Regional Supplement for the Arid West Region* (USACE 2008a). Non-wetland waters (NWW) of the U.S. and/or state were delineated based on the presence of an ordinary high water mark (OHWM), as determined using the methodology in the *OHWM Field Guide for the Arid West Region* (USACE 2008b). Aquatic resources were recorded

and mapped in the field using a Trimble R1 GNSS Receiver with sub-meter accuracy and ArcGIS Collector app for iOS. On June 9, 2021, the final Aquatic Resources Delineation Report with a formal request for an Approved Jurisdictional Delineation was submitted to USACE, Sacramento District, to definitively determine and approve the extent of waters of the U.S. (Appendix F).

#### 4.1.2.2 Protocol-Level Large Listed Branchiopod Dry Season Surveys

Protocol-level dry season surveys were conducted for large-listed branchiopods (i.e., vernal pool fairy shrimp [*Branchinecta lynchi*] and vernal pool tadpole shrimp [*Lepidurus packardii*]) within the Action Area. The purpose of protocol-level large listed branchiopod dry season surveys is to identify if listed branchiopods are present within aquatic habitat soils that may potentially be subject to agency jurisdiction pursuant to federal and state regulations under FESA, California Endangered Species Act, California Fish and Game Code, and California Environmental Quality Act guidelines. On behalf of the Applicant, surveys were conducted on October 13 through 16, October 19 through 22, and November 11, 2020, by Dudek biologists holding valid USFWS 10(a)(1)(A) Recovery Permits for the listed species. Surveys were conducted in accordance with the *Survey Guidelines for Large Listed Branchiopods* (USFWS 2017) and were approved by USFWS prior to surveying.

For the dry season surveys, soil samples were collected from the bottom of each known aquatic resource when the soil was very dry, and a small 6-inch hand trowel was used to excavate between 10 and 100 samples of soil (approximately 100 milliliters each), depending on the size of the aquatic resource. The locations of the aquatic resources and sampling transects were recorded and mapped in the field using ArcGIS Collector app for iOS. Samples were collected equidistantly along two perpendicular transects. Soil samples were submitted in November 2020 for processing by Helm Biological Consulting to assess for cysts in the soil samples. On February 11, 2021, the *final 90-Day Dry Season Protocol Survey Letter Report for Federally Listed Branchiopods* was submitted to the Sacramento Office of the USFWS. On March 4, 2021, the USFWS provided a formal receipt of all report submittals (Appendix D).

#### 4.1.2.3 Protocol-Level Large Listed Branchiopod Wet Season Surveys

Protocol-level wet season surveys were conducted for large-listed branchiopods (i.e., vernal pool fairy shrimp and vernal pool tadpole shrimp) within the Action Area. The purpose of protocol-level large listed branchiopod wet season surveys is to identify if live listed branchiopods are present within inundated aquatic resources that may be subject to jurisdiction pursuant to state regulations under FESA, California Endangered Species Act, California Fish and Game Code, and California Environmental Quality Act guidelines. Surveys were conducted on February 3–5, February 17–18, March 3–4, March 17–18, March 31, April 14–15, and April 28, 2021, by a Dudek biologist holding a valid USFWS 10(a)(1)(A) Recovery Permit for the species. Surveys were conducted in accordance with the *Survey Guidelines for Large Listed Branchiopods* (USFWS 2017) and were approved by USFWS prior to surveying.

For the wet season surveys, site visits began after initial storm events when potential listed large branchiopod habitat had become inundated. All potential habitat was sampled at 14-day intervals after the initial inundation of habitat. Sampling continued within each potential habitat until it dried. At each wet season visit, representative portions of the bottom, edges, and vertical water column of the features were adequately sampled using a dip net or aquarium net. The contents of the nets were examined and emptied frequently. Information on pool conditions and species was recorded and mapped in the field using ArcGIS Collector app for iOS. The *final 90-Day Wet Season*

*Protocol Survey Letter Report for Federally Listed Branchiopods* was submitted to the Sacramento Office of the USFWS in July 2021. On July 29, 2021, the USFWS provided a formal receipt of all report submittals (Appendix E).

#### 4.1.2.4 Protocol-Level Valley Elderberry Longhorn Beetle Surveys

Dudek conducted focused surveys for valley elderberry longhorn beetle within the Action Area on February 19 and 25, 2021, and January 12, 2022. Surveys were conducted prior to the onset of the typical known emergence period for adult valley elderberry longhorn beetle (i.e., March through June). The purpose of the surveys was to identify habitat and species presence that may be potentially subject to agency jurisdiction. The surveys were performed using the *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (Desmocerus californicus dimorphus)* (USFWS 2022f), and the *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (USFWS 1999). The surveys focused on the assessment of black elderberry shrubs (i.e., *Sambucus nigra*), the host plant to valley elderberry longhorn beetle, to evaluate for ancillary evidence of presence including eggs and/or larval galleries, bore holes, and frass. Only elderberry shrubs stem greater than 1 inch diameter at breast height were evaluated. Elderberry shrub health, total number of stems, and proximity to riparian habitat were also recorded during the surveys. Elderberry shrub locations were recorded and mapped in the field using ArcGIS Collector app for iOS.

## 4.2 Environmental Setting

The following section provides information pertaining to the existing physical conditions within the Action Area.

### 4.2.1 Regional Setting and Land Use

The Action Area is located within eastern Sacramento County at the eastern edge of the Central Valley, approximately 15 miles from the western foothills of the Sierra Nevada Mountains (Figure 1). The Action Area is less than 1 mile south of State Route 16, and approximately 18 miles southeast of the City of Sacramento. The Action Area is surrounded by rural residential, commercial development, and open space composed of annual grassland and agricultural fields. The Action Area is primarily used for cattle grazing or other agricultural operations. There is an existing solar facility located in the southeast corner of the Action Area (Figure 2).

### 4.2.2 Climate

The Action Area is in a semi-arid climate where average annual temperatures range from approximately 53°F to 91°F, and the average annual precipitation is 20.06 inches. On average, the months with the highest rainfall are December and January, and July has the least precipitation (WRCC 2022). According to data from the Sacramento WB City weather station, the total precipitation recorded from October 1, 2019, through September 30, 2021, was 17.92 inches, approximately 61% of normal. Therefore, the Action Area region had below normal hydrological conditions in the year preceding the biological resource surveys. The Sacramento WB City weather station is located approximately 18 miles west of the Action Area at an elevation of approximately 25 feet amsl (CDEC 2020).

### 4.2.3 Soil and Terrain

The Action Area is in an area of relatively flat topographic relief with scattered rolling hills. Elevations within the Action Area range from approximately 95 feet amsl in the western portion of the Action Area to 160 feet amsl in the southeastern portion of the Action Area.

According to the Natural Resources Conservation Service, there are 16 soil units mapped within the Action Area. Each soil unit, hydric and drainage class (i.e., frequency and duration of wet periods in conditions like those in which it was developed), and typical landform or geomorphic position within the landscape is detailed in Table 2. Figure 3, Soil and Terrain Setting, provides the geographic extent of each soil unit in the Action Area region (USDA 2022).

Of the 16 soil units identified within the Action Area, six are listed as hydric soils. Hydric soils are defined by the National Technical Committee for Hydric Soils as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (USDA 2021). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation. Refer to Section 4.2.4 for description of wetlands and other waters recorded in the Action Area. Soils encountered during the field surveys were generally classified as clay to clay loam soils. Table 2 below shows the soils occurring within the Action Area.

**Table 2. Summary of Soil Units Within the Action Area**

Soil Map Unit Name	Landform	Drainage Class	Hydric	Total Area within Action Area (acres)
Bruella sandy loam, 0%–2% slopes	Terraces	Well-drained	No	2.44
Bruella sandy loam, 2%–5% slopes	Terraces	Well-drained	No	58.80
Columbia sandy loam, 0%–2% slopes	Flood plains	Somewhat poorly drained, occasionally flooded	Yes	17.93
Galt clay, 0%–1% slopes	Basin floors on fan remnants	Somewhat poorly drained	Yes	33.0
Galt clay, 2%–5% slopes	Basin floors on fan remnants	Moderately well drained	Yes	126.62
Hadselville-Pentz complex, 2%–30% slopes	Hills	Moderately well drained to well drained	No	226.32
Peters clay, 1%–8% slopes	Hills	Well drained	No	56.94
Redding gravelly loam, 0%–8% slopes	Fan remnants	Moderately well drained	No	14.93
Reiff fine sandy loam, 0%–2% slopes	Flood plains	Well drained, occasionally flooded	No	96.11
Sailboat silt loam, drained, 0%–2% slopes	Flood plains on natural levees	Somewhat poorly drained, occasionally flooded	Yes	3.50

**Table 2. Summary of Soil Units Within the Action Area**

Soil Map Unit Name	Landform	Drainage Class	Hydric	Total Area within Action Area (acres)
San Joaquin silt loam, 0%–3% slopes	Terraces	Moderately well drained	No	14.02
San Joaquin silt loam, 0%–8% slopes	Terraces	Moderately well drained	No	52.45
San Joaquin-Durixeralfs complex, 0%–1% slopes	Terraces	Moderately well drained to well drained	No	0.25
San Joaquin-Galt complex, leveled, 0%–1% slopes	Terraces	Moderately well drained	Yes	0.52
San Joaquin-Galt complex, 0%–3% slopes	Terraces	Moderately well drained	Yes	18.59
San Joaquin-Xerarents complex, leveled, 0%–1% slopes	Terraces	Moderately well drained to well drained	No	3.52

Source: USDA 2022.

#### 4.2.4 Hydrology

The Action Area occurs within the Upper Cosumnes River watershed, which drains approximately 180 square miles of land in El Dorado, Amador, and Sacramento Counties (Hydrological Unit Code 1804001306) (USGS 2022). A complex of seasonally inundated aquatic features generally drains the Action Area in a southwesterly direction, and the Cosumnes River flows within the western boundary of the Action Area (Figure 5). The western half of the Action Area is located within the Federal Emergency Management Agency National Flood Hazard Layer 1% 100-year floodplain of the Cosumnes River (FEMA 2022), which flows immediately west of the Action Area. However, the portion of the Cosumnes River within the Action Area is bounded by levees intended to contain the river and protect against overtopping during varied annual precipitation events. The National Wetlands Inventory maps numerous aquatic resources in the Action Area, including Freshwater Emergent Wetland, Freshwater Forested/Shrub Wetland, Freshwater Pond, and Riverine (USFWS 2020c). The National Wetlands Inventory dataset is based on coarse aerial mapping (Figure 5). Table 3 below shows the distribution of aquatic resources within the Action Area.

**Table 3. Summary of Aquatic Resources within the Action Area**

Aquatic Resource Feature	Aquatic Resource Type	Total Acreage
<b>Solar Development Area</b>		
Ditch	NWW	0.15
Ephemeral Drainage	NWW	0.74
Intermittent Drainage	NWW	0.46
Seasonal Wetland Swale	NWW	0.70
Upland Swale	NWW	0.08
Pond	Wetlands	0.37
Seasonal Wetland	Wetlands	3.10

**Table 3. Summary of Aquatic Resources within the Action Area**

Aquatic Resource Feature	Aquatic Resource Type	Total Acreage
Vernal Pool	Wetlands	0.25
	<i>Sub-Total</i>	5.85
<b>Adjacent Other Lands</b>		
Ditch	NWW	1.78
Ephemeral Drainage	NWW	0.37
Intermittent Drainage	NWW	1.91
Perennial Drainage	NWW	24.10
Seasonal Wetland Swale	NWW	1.45
Upland Swale	NWW	0.54
Freshwater Emergent Wetland	Wetlands	0.02
Pond	Wetlands	16.64
Seasonal Wetland	Wetlands	11.06
Vernal Pool	Wetlands	6.04
	<i>Sub-Total</i>	63.90
	<b>Total</b>	<b>69.75</b>

Source: SSSLIC 2022a.

#### 4.2.4.1 Waters

##### Ditch

There are four ditches comprising approximately 1.93 acres (5,105.55 linear feet) throughout the Action Area, of which 0.15 acre (720.26 linear feet) is within the Solar Development Area, and 1.78 acres (4,385.29 linear feet) are within the Adjacent Other Lands of the Action Area (Figure 6). The earthen ditches are human-made features with intermittent hydrology intended for runoff from stormwater, agricultural uses, irrigation, or similar purposes. There is no continuous riparian corridor associated with the ditch features in the Action Area (SSSLIC 2022b) (Appendix F).

##### Ephemeral Drainage

There are four ephemeral drainages comprising approximately 1.11 acres (3,431.84 linear feet) within the Action Area, of which 0.74 acres (2,439.08 linear feet) occur in the Solar Development Area and 0.37 acres (992.76 linear feet) occur in the Adjacent Other Lands (Figure 6). Ephemeral drainages on site consist of stream channels that are naturally occurring rather than human created and contain flowing water during and briefly after precipitation events. Hydrology of the ephemeral drainages depends on inputs during rain events and runoff from the surrounding uplands. There are no continuous riparian corridors associated with these features in the Action Area (SSSLIC 2022b) (Appendix F).

## Freshwater Emergent Wetland

One freshwater emergent wetland comprising approximately 0.02 acres occurs in the southwest corner of the Action Area (Figure 6). This feature entirely occurs within the Adjacent Other Lands within the Action Area. This feature has developed because of artificial irrigation and would likely convert to upland vegetation if the leakage were repaired (SLLC 2022b) (Appendix F).

## Intermittent Drainage

There is one intermittent drainage comprising approximately 2.36 acres (4,462.81 linear feet) within the Action Area, of which 0.46 acres (1,303.60 linear feet) occur in the Solar Development Area and 1.91 acres (3,159.21 linear feet) occur in the Adjacent Other Lands (Figure 6). Intermittent drainages generally have flowing water during certain times of the year, when groundwater provides water for stream flow, and receive supplemental water from rainfall runoff. The intermittent drainage on site appears to receive water via a culvert from a basin complex located north of the Action Area. The drainage receives water from two adjacent seasonal wetland swales, contains three seasonal wetlands within low points or widenings, and terminates into Pond 3 (SLLC 2022b) (Appendix F).

## Perennial Drainage (Cosumnes River)

The northwestern portion of the Action Area contains 24.10 acres (4,506.29 linear feet) of the Cosumnes River and its associated riparian corridor. This feature entirely occurs within the Adjacent Other Lands within the Action Area (Figure 6). The Cosumnes River is a known jurisdictional water with perennial flows that originates in the Sierra Nevada mountains and flows approximately 50 miles into the Central Valley, emptying into the Mokelumne River in the Sacramento San Joaquin Delta (SLLC 2022b) (Appendix F).

## Seasonal Wetland Swale

There are 15 seasonal wetland swales comprising approximately 2.15 acres (8,807.17 linear feet) within the Action Area, of which 0.70 acres (3,874.33 linear feet) occur in the Solar Development Area, and 1.45 acres (4,932.85 linear feet) occur in the Adjacent Other Lands (Figure 6). Seasonal wetland swales on site consist of topographic depressions that would be expected to convey water when inundated, but where a defined bed and bank and typical fluvial indicators are lacking (SLLC 2022b) (Appendix F).

## Upland Swale

There are seven upland swales comprising approximately 0.62 acres (1,837.54 linear feet) within the Action Area, of which 0.08 acres (923.59 linear feet) occur in the Solar Development Area and 816 linear feet 0.54 acres (811.44 linear feet) occur in the Adjacent Other Lands (Figure 6). Upland swales on site consisted of linear topographic depressions that lack a distinct OHWM (SLLC 2022b) (Appendix F).

### 4.2.4.2 Wetlands

#### Seasonal Wetland

There are 51 seasonal wetlands comprising approximately 14.16 acres throughout the Action Area, of which 3.10 acres occur in the Solar Development Area and 11.06 acres occur in the Adjacent Other Lands (Figure 6). These



features only are inundated seasonally, and some are connected via seasonal wetland swales, ephemeral drainages, and/or intermittent drainages. Seasonal wetlands were characterized by a distinct change in vegetation type and cover from the surrounding grassland. Small mammal burrows were observed within several of the features, indicating that these features remained dry for a long enough period for subterranean animals to inhabit them (SLLC 2022b) (Appendix F).

**Pond**

There are three ponds comprising approximately 17.01 acres within the Action Area, of which 0.37 acres occur in the Solar Development Area and 16.64 acres occur in the Adjacent Other Lands (Figure 6). These features are natural closed depressions that have been artificially augmented by perennial water sources, for the purpose of supporting livestock (SLLC 2022b) (Appendix F).

**Vernal Pool**

There are 17 vernal pools comprising approximately 6.30 acres throughout the Action Area, of which 0.25 acres occur in the Solar Development Area and 6.04 acres occur in the Adjacent Other Lands (Figure 6). These features were characterized as three-parameter wetlands with an impermeable layer such as a hard pan that may fill and empty several times during the rainy season. These features may be isolated or connected to larger vernal complexes via swales or subsurface flows. The vernal pools on site exhibited concentric rings of distinctly different vegetation cover and species composition (SLLC 2022b) (Appendix F).

## 4.2.5 Vegetation Communities and Land Cover Types

Vegetation communities and land cover types within the Action Area consist of a combination of terrestrial non-vegetative land covers and natural vegetation communities (Figure 7). The vegetation communities and land covers within the Action Area were mapped using the SSHCP land cover data (Sacramento County 2018). SSHCP vegetation communities and land cover types occurring within the Action Area include agricultural, California annual grassland, low density development, mixed riparian forest, urban, valley foothill riparian, and valley grassland. The SSHCP has also mapped aquatic resource land covers with the Action Area including hydrologic streams and creeks, swales, seasonal wetlands, and vernal pools (Figure 5, Vegetation and Land Cover). The SSCHP aquatic resources within the Action Area have been replaced with the more detailed mapping of aquatic resources as defined in Section 4.2.4. Table 4 below provides a summary of vegetation communities and land cover types within the Action Area.

**Table 4. Summary of Vegetation Communities and Land Cover Types within the Action Area**

Vegetation Community/Land Cover Type	Total Acreage
<b>Solar Development Area</b>	
California Annual Grassland	357.61
Low Density Development	6.84
Urban	1.96
<i>Sub-Total</i>	366.41



**Table 4. Summary of Vegetation Communities and Land Cover Types within the Action Area**

Vegetation Community/Land Cover Type	Total Acreage
<b>Adjacent Other Lands</b>	
Agricultural	85.33
California Annual Grassland	180.48
Low Density Development	14.93
Mixed Riparian Woodland	10.42
Urban	2.32
Valley Foothill Riparian	17.38
Valley Grassland	2.86
<i>Sub-Total</i>	<i>313.71</i>
<b>Total</b>	<b>680.12</b>

**Source:** Sacramento County 2018.

**Note:** The total acreage of vegetation communities land cover types omits overlapping aquatic resources occurring in the Action Area.

#### 4.2.5.1 Vegetation Communities

##### California Annual Grassland

California annual grassland is the dominant vegetation community present through all portions of the Action Area. Dominant species in this community include soft brome (*Bromus hordeaceus*), medusa head (*Elymus caput-medusae*), and narrow tarweed (*Holocarpha virgata*). The shrub and tree layer are absent from this vegetation community. There are numerous aquatic features that occur throughout the California annual grassland (discussed in Section 4.2.4). California annual grassland supports wildlife species such as herbivores, deer, rabbits, gophers, and mice, and provides suitable nesting and foraging bird habitat. California annual grassland comprises a total of 357.61 acres in the Solar Development Area and a total of 180.48 acres in the Adjacent Other Lands of the Action Area.

##### Mixed Riparian Woodland

Mixed riparian woodland is a vegetation community that is present along the Consumes River corridor, on the east side of the Action Area, outside of the Solar Development Area. Mixed riparian woodland intergrades with the valley grassland wooded borders along streams and agricultural fields (Sacramento County 2018). Vegetation associated with this vegetation community includes various oak species (*Quercus* spp.) and elderberry shrubs, as well as other herbaceous species that occur in the sparse to densely vegetated ground cover. There is no mixed riparian woodland within the Solar Development Area. Mixed riparian woodland comprises a total of 10.42 acres with the Adjacent Other Lands of the Action Area.

##### Valley Foothill Riparian

Valley foothill riparian is a vegetation community that is also present along the Cosumnes River corridor. Valley foothill riparian is like the mixed riparian woodland vegetation community. There is no valley foothill riparian within

the Solar Development Area. Valley foothill riparian comprises a total of 17.38 acres with the Adjacent Other Lands of the Action Area.

### Valley Grassland

Valley grassland is present within a ditch adjacent to the agricultural areas in the eastern vicinity of the Action Area. Valley grassland is a vegetation community that is like the California annual grassland vegetation community. Additionally, valley grassland is one of the most dominant vegetation types in the Action Area and in the Action Area region (Sacramento County 2018). This vegetation community is characterized mostly by naturalized annual grasses and herbaceous annual forbs and includes patches with relatively high proportions of native grasses and forbs. There is no valley grassland within the Solar Development Area. Valley grassland comprises a total of 2.86 acres with the Adjacent Other Lands of the Action Area.

## 4.2.5.2 Land Cover Types

### Agricultural

Agricultural land cover comprises a large field to the east of the Cosumnes River riparian corridor and levee. Land cover classified as agricultural typically includes lands where farming and other agricultural practices take place, including pastures (hay and alfalfa), row crops and other unidentified croplands. Production practices observed in the Action Area include flood-irrigation and cultivation followed by harvesting and discing. After discing, some fields remain fallow for short periods of time, allowing for the establishment of annual and biennial native and non-native annual grasses and broad-leaved plants, including many non-native species. In 2018, approximately 500 acres were burned in a fire and no irrigation was initiated. No agricultural land cover was identified in the Solar Development Area of the Action Area. Agricultural land cover comprises a total of 85.33 acres in the Adjacent Other Lands of the Action Area.

### Low Density Development

The low-density development land cover type consists of relatively sparse constructed environments such as residences and other structures, including farm buildings, and small rural neighborhoods with large individual property sizes per house (Sacramento County 2018). These areas are primarily concentrated in the northeastern vicinity of the Action Area, adjacent to agricultural lands. Low density development land cover comprises a total of 6.84 acres in the Solar Development Area and a total of 14.93 acres in the Adjacent Other Lands of the Action Area.

### Urban

The urban land cover type consists of developed areas, including roadways and other general infrastructure systems. Most urban areas, if planted, are planted with non-native grasses, shrubs, and trees. Species composition in urban habitats varies with planting design and climate. Monoculture is commonly observed in tree groves and street tree strips. Some urban land covers are regularly maintained by irrigation, mowing, pruning, or other management techniques (Sacramento County 2018). Urban land cover in the Action Area consists of Sacramento County roads. Urban land cover comprises a total of 1.96 acres in the Solar Development Area and a total of 2.32 acres in the Adjacent Other Lands of the Action Area.

## 4.3 Considered Species Accounts

### 4.3.1 Vernal Pool Fairy Shrimp (*Branchinecta lynchi*)

#### 4.3.1.1 Status and Distribution

Vernal pool fairy shrimp is listed as a threatened species under FESA. In California, the species is found from Shasta County in the north, throughout the Central Valley, and west to the central Coast Ranges, at elevations of 30 to 4,000 feet. Additional populations have been reported from the Agate Desert region of Oregon near Medford. Disjunct populations occur in San Luis Obispo, Santa Barbara, and Riverside Counties. However, most known locations are in the Sacramento and San Joaquin Valleys and along the eastern margin of the central Coast Ranges (Eng et al. 1990).

#### 4.3.1.2 Habitat and Ecology

Vernal pool fairy shrimp inhabit vernal pools that form in depressions, usually in grassland habitats (Eng et al. 1990). Pools must remain inundated long enough for the species to complete its life cycle. The final DCH for these species specifies that vernal pool crustaceans and plants live in vernal pools (shallow depressions that hold water seasonally), swales (shallow drainages that carry water seasonally), and ephemeral (short duration) freshwater habitats. Though some of the habitat characteristics of the species are known, specific pool characteristics that determine suitability for vernal pool fairy shrimp hatching, growth, and reproduction are not well understood. Vernal pool fairy shrimp occurrences are known to occur in eight general areas of concentration on basin rim, low terrace, high terrace, volcanic mudflow, valley floor, alkaline playa, and coastal mountain landforms. Vernal pool fairy shrimp are usually found in vernal pools although they are sometimes found in a range of natural and artificially created ephemeral habitats such as alkali pools, seasonal drainages, stock ponds, vernal swales, and rock outcrops. Vernal pool fairy shrimp are most frequently found in small (<2,125 ft<sup>2</sup> (<200 m<sup>2</sup>)) and shallow (2 in (mean of 5 cm)) pool habitats; however, this species can be found in large (480,967 ft<sup>2</sup> (44,534 m<sup>2</sup>)) and very deep (48 in (122 cm)) pool habitats as well. The DCH primary constituent elements for vernal pool fairy shrimp are the habitat components that provide (USFWS 2005b):

- Topographic features characterized by mounds and swales, and depressions within a matrix of surrounding uplands that result in complexes of continuously, or intermittently, flowing surface water in the swales connecting the pools described below, providing for dispersal, and promoting hydroperiods of adequate length in the pools.
- Depressional features including isolated vernal pools with underlying restrictive soil layers that become inundated during winter rains and that continuously hold water for a minimum of 18 days, in all but the driest years: thereby providing adequate water for incubation, maturation, and reproduction. As these features are inundated on a seasonal basis, they do not promote the development of obligate wetland vegetation habitats typical of permanently flooded emergent wetlands.
- Sources of food, expected to be detritus occurring in the pools, contributed by overland flow from the pools' watershed, or the results of biological processes within the pools themselves, such as single-celled bacteria, algae, and dead organic matter, to provide for feeding.

- Structure within the pools described above, consisting of organic and inorganic materials, such as living and dead plants from plant species adapted to seasonally inundated environments, rocks, and other inorganic debris that may be washed, blown, or otherwise transported into the pools, which provide shelter.

Female vernal pool fairy shrimp carry fertilized eggs in a sac on the underside of their body. The eggs are either dropped to the pool bottom or remain in the brood sac until the mother dies and sinks to the bottom of the pool. When the pool dries out, so do the eggs. Resting fairy shrimp eggs are known as cysts. Cysts may remain viable for multiple years due to their protective coverings that help them withstand extreme environmental conditions and even digestion by predators. The cysts remain in the dry pool bed until hatching begins in response to rains and the return of water in the vernal pools (USFWS 2022d).

The lifespan of the vernal pool fairy shrimp is 91 days on average. Vernal pool fairy shrimp can be found in vernal pools starting in November most years and complete their entire life cycle by early May. On average, vernal pool fairy shrimp take 18 days to mature after hatching and 40 days to reproduce. Multiple cohorts of eggs may hatch in a single vernal pool throughout the wet season, given the right conditions. Vernal pool fairy shrimp disappear before the vernal pools dry (USFWS 2022d).

Vernal pool fairy shrimp are non-migratory and have little ability to disperse on their own. Aquatic birds are the most likely agents of dispersal of vernal pool fairy shrimp. Large mammals are also known to act as distributors by wallowing in dirt, getting cysts caught in their fur and transporting the cysts to another wallow. Additionally, cysts can be ingested, passed through the digestive tract, and then deposited in new habitats when the animal urinates (USFWS 2022d).

### 4.3.1.3 Habitat and Occurrence in the Action Area

Vernal pool fairy shrimp may occur in the vicinity of the Action Area, but this species was not observed during protocol-level dry and wet season surveys. Suitable habitat and SSHCP modeled habitat are present in the Action Area, which includes vernal pools (Sacramento County 2018). There are various DCH units for vernal pool fairy shrimp within 5 miles of the Action Area, with the nearest 1.3 miles southeast of the Action Area (USFWS 2022e). In addition, there are several known occurrences for this species within 5 miles of the PSA, with the nearest being located within 0.25 miles of the PSA on the south side of Meiss Road, approximately 0.75 miles southeast of the intersection at Dillard Road (CDFW 2022). A summary of the protocol-level large listed branchiopod dry and wet season survey results is provided below in Section 4.2.3.

## 4.3.2 Vernal Pool Tadpole Shrimp (*Lepidurus packardii*)

### 4.3.2.1 Status and Distribution

Vernal pool tadpole shrimp is listed as endangered under ESA. Vernal pool tadpole shrimp is a California Central Valley endemic species, with most populations in the Sacramento Valley. This species has also been reported from the Sacramento to the San Joaquin River Delta east of San Francisco Bay and from scattered localities in the San Joaquin Valley from San Joaquin to Madera Counties (USFWS 2022e).

### 4.3.2.2 Habitat and Ecology

Vernal pool tadpole shrimp occur in a wide variety of seasonal habitats, including vernal pools, ponded clay flats, alkaline pools, ephemeral stock tanks, and roadside ditches. This species is typically found at the highest concentrations in playa pools, large deep vernal pools, and winter lakes (larger than 100 acres) but have also been found in small ephemeral pools (smaller than 25 square feet). The species' presence in small pools is believed to be a result of wash down from larger source pools. Vernal pool tadpole shrimp have been observed in a variety of habitats ranging from clear, vegetated vernal pools to highly turbid alkali scalds with variable depths and volumes of water during the wet cycle (USFWS 2022e). The DCH primary constituent elements for vernal pool tadpole shrimp are equal to those for vernal pool fairy shrimp, as detailed above in section 4.2.1.2.

Female vernal pool tadpole shrimp produce up to six clutches of eggs containing 32 to 61 eggs per clutch each wet season. The life span of the vernal pool tadpole shrimp is about 144 days on average. Vernal pool tadpole shrimp can be found in vernal pools starting in November most years and complete their entire life cycle by early May. On average, vernal pool tadpole shrimp take 38 days to mature after hatching and 51 days to reproduce. Multiple cohorts of eggs may hatch in a single vernal pool throughout the wet season given the right conditions. Vernal pool tadpole shrimp disappear before the vernal pools dry (USFWS 2022e).

Vernal pool tadpole shrimp are non-migratory and have little ability to disperse on their own. Aquatic birds are the most likely agents of dispersal of vernal pool tadpole shrimp. Large mammals are also known to function as distributors by wallowing in dirt, getting cysts caught in their fur and transporting the cysts to another wallow. Additionally, cysts can be ingested, passed through the digestive tract, and then deposited in new habitats when the animal urinates (USFWS 2022e).

### 4.3.2.3 Habitat and Occurrence in the Action Area

Vernal pool tadpole shrimp has been documented in the Action Area (Sacramento County 2018) but was not observed during protocol-level dry and wet season surveys of the Action Area during 2020–2021. Suitable habitat and SSHCP modeled habitat are present within the Solar Development Area, including vernal pools (CDFW 2022; Sacramento County 2018). In addition, there are various DCH units for vernal pool tadpole shrimp within 5 miles of the Action Area, with the nearest 1.3 miles southeast of the Action Area (USFWS 2020a). A summary of the protocol-level large listed branchiopod dry and wet season survey results is provided below in Section 4.2.3.

## 4.3.3 Branchiopod Survey Results

### 4.3.3.1 Protocol-Level Dry Season Survey Results

Dry season branchiopod surveys were conducted in October and November 2020 (Table 5). Soil samples were submitted to Dr. Brent Helm at Helm Biological Consulting to process the dry soil samples for the presence of cysts from fairy shrimp and tadpole shrimp. Dry season surveys were negative for federally listed large branchiopods (Figure 9). However, six features contained cysts belonging to the non-listed California fairy shrimp (*Linderiella occidentalis*) (SSLLC 2021a) (Appendix D).

**Table 5. Summary of Dry Season Survey Dates, Site Conditions, and Biologists Present**

Date of Survey	Site Conditions	Permitted Biologist	Assisting Biologists
October 13, 2020	66°F–90°F; 0%–10% cloud cover; 0–6 mph wind	Heather Moine <sup>1</sup>	Allie Sennett
October 14, 2020	62°F–91°F; 0% cloud cover; 1–7 mph wind	Heather Moine	Allie Sennett
October 15, 2020	57°F–90°F; 0% cloud cover; 0–5 mph wind	Heather Moine	Emily Scricca
October 19, 2020	55°F–89°F; 0% cloud cover; 0–4 mph wind	Heather Moine	Laura Burris
October 20, 2020	54°F–88°F; 0% cloud cover; 0–4 mph wind	Heather Moine, Paul Lemons <sup>2</sup>	Laura Burris, Anna Godinho, Emily Scricca, and Allie Sennett
October 21, 2020	54°F–88°F; 0% cloud cover; 0–4 mph wind	Heather Moine, Paul Lemons	Laura Burris, Anna Godinho, Emily Scricca, and Allie Sennett
October 22, 2020	56°F–78°F; 0% cloud cover; 0–6 mph wind	Heather Moine	Anna Godinho, Allie Sennett
October 23, 2020	45°F–59°F; 0% cloud cover; 0–3 mph wind	Heather Moine	Anna Godinho
November 11, 2020	42°F–58°F; 80%–90% cloud cover; 0–4 mph wind	Heather Moine	Anna Godinho, Allie Sennett

**Notes:**<sup>1</sup> Heather Moine (TE-60147A-1).<sup>2</sup> Paul Lemons (TE-051248-6).**4.3.3.2 Protocol-Level Wet Season Survey Results**

Wet season branchiopod surveys were conducted February through April 2021, with surveys occurring every 14 days (Table 6). Wet season surveys were negative for federally listed large branchiopods (Figure 7) (SLLC 2021b) (Appendix D).

**Table 6. Summary of Wet Season Survey Dates, Site Conditions, and Biologists Present**

Date of Survey	Site Conditions	Permitted Biologist	Assisting Biologists
February 3, 2021	48°F–50°F; 10%–100% cloud cover; 0–3 mph wind	Heather Moine <sup>1</sup>	Laura Burris, Morgan Kennedy
February 4, 2021	40°F–55°F; 10%–50% cloud cover; 0–3 mph wind	Heather Moine	Laura Burris, Morgan Kennedy
February 5, 2021	54°F–63°F; 0%–10% cloud cover; 0 mph wind	Heather Moine	Laura Burris, Morgan Kennedy
February 17, 2021	41°F–60°F; 0%–10% cloud cover; 1–15 mph wind	Heather Moine	Paul Keating, Adam Crawford

**Table 6. Summary of Wet Season Survey Dates, Site Conditions, and Biologists Present**

Date of Survey	Site Conditions	Permitted Biologist	Assisting Biologists
February 18, 2021	39°F–61°F; 30%–90% cloud cover; 0–5 mph wind	Heather Moine	Morgan Kennedy, Adam Crawford
February 18, 2021	50°F–54°F; 100% cloud cover; 0–3 mph wind	Heather Moine	Morgan Kennedy, Paul Keating
March 3, 2021	46°F–60°F; 100% cloud cover; 0–4 mph wind	Heather Moine	Anna Godinho, Paul Keating
March 4, 2021	49°F–67°F; 0% cloud cover; 0–4 mph wind	Heather Moine	Anna Godinho, Paul Keating
March 17, 2021	41°F–58°F; 90% cloud cover; 0–4 mph wind	Heather Moine	Adam Crawford, Naomi Serratos
March 18, 2021	47°F–59°F; 100% cloud cover; 0–3 mph wind	Heather Moine	Adam Crawford, Naomi Serratos
March 31, 2021	61°F–81°F; 0% cloud cover; 0–2 mph wind	Heather Moine	Adam Crawford
April 1, 2021	48°F–80°F; 0%–10% cloud cover; 0–3 mph wind	Heather Moine	None
April 14, 2021	58°F–71°F; 0%–10% cloud cover; 0–4 mph wind	Heather Moine	Adam Crawford
April 15, 2021	63°F–73°F; 0% cloud cover; 0–5 mph wind	Heather Moine	Adam Crawford, Allie Sennett
April 28, 2021	52°F–83°F; 0% cloud cover; 0–4 mph wind	Heather Moine	Allie Sennett, Sarah Foster

**Note:**

<sup>1</sup> Heather Moine (TE-60147A-1)

## 4.3.4 Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*)

### 4.3.4.1 Status and Distribution

Valley elderberry longhorn beetle is a federally threatened species known to occur in the within the region of the Action Area and with a low likelihood to occur within the Action Area. Valley elderberry longhorn beetle is completely dependent on its host plant, elderberry (*Sambucus* spp.), which occurs in riparian and other upland communities in California's Central Valley and the neighboring foothills. Specifically, the range of this species extends from approximately Shasta County in the north to Fresno County in the south including the valley floor and lower foothills. The majority of valley elderberry longhorn beetle have been documented below 500 feet amsl. Areas above 500 feet amsl with suitable habitat and known valley elderberry longhorn beetle occurrences in a drainage may contain valley elderberry longhorn beetle populations in certain circumstances (USFWS 2022f).



#### 4.3.4.2 Habitat and Ecology

Elderberry shrubs are the obligate larval host plants for the valley elderberry longhorn beetle. Elderberry shrubs are common in a variety of riparian and non-riparian vegetative communities. Elderberry shrub presence within the species range is determined by broad scale hydrologic regimes such as the relative elevation of floodplain and floodplain width, and secondarily by sediment texture and topography. Elderberry shrubs are most common on higher and older riparian terraces, where the roots of the plant can reach the water table and where the plants are not inundated for long periods. Elderberry shrubs can be found on historic floodplain terraces above the river, on levees (both on the river and land sides), and along canals, ditches, and areas where subsurface flow provides water to elderberry roots. Elderberry shrubs typically occur in most vegetation communities that occupy historic and current floodplains and terraces, to the top of channel walls in deeply incised rivers, and to the top of and on the landside of levees where woody plants create savannas or patchy woodlands. Elderberry shrubs can be a canopy or subcanopy species depending on the hydrology, vegetation composition, or disturbance at a particular site and it can occur as individual shrubs, clumps, clusters, and groves. In non-riparian settings, elderberry shrubs occur either singly or in groups in valley oak and blue oak woodland and annual grasslands (USFWS 2022f).

Much of the existing research has focused on the valley elderberry longhorn beetle's use of riparian habitat. Research suggests that the valley elderberry longhorn beetle occurs throughout the Central Valley in metapopulation. Metapopulations are defined as a system of discrete subpopulations that may exchange individuals through dispersal or migration. The valley elderberry longhorn beetle metapopulation occurs throughout contiguous intact riparian habitat as subpopulations that shift spatially and temporally within drainages, resulting in a patchwork of occupied and unoccupied habitat. In non-riparian habitats, a patchwork of individual shrubs provides opportunity for valley elderberry longhorn beetle occupancy, but it is unknown if the movement and distribution patterns remain consistent with the patterns found in riparian areas (USFWS 2022).

The valley elderberry longhorn beetle is a small (0.5 to 0.8 inches) wood-boring beetle in the Cerambycid family. It is sexually dimorphic, and the females are indistinguishable from the more widespread California elderberry longhorn beetle (*Desmocerus californicus californicus*). Elderberry shrubs support valley elderberry longhorn beetle and their larvae, which go through several developmental stages within the elderberry shrub. Eggs are laid individually on leaves or at the junctions of the leaf stalk and main stem. Upon hatching, the larvae bore into the elderberry stem and create feeding galleries in the pith. Prior to pupation, the larvae create an exit hole, plugs the hole with wood shavings, and returns to the gallery where it pupates. Approximately 1 month later, the adult beetle emerges from the stem through the previously created exit hole. Adult emergence, mating, and egg-laying, occurs in the spring and summer, specifically March to June, typically coinciding with the elderberry flowering. Under laboratory conditions, adult males typically live 4 to 5 days, while females can live up to 3 weeks. The only identifiable exterior evidence of elderberry use by VELB is the exit hole created by the larvae (USFWS 2022f).

#### 4.3.4.3 Habitat and Occurrence in the Action Area

There is suitable habitat within the Action Area. A total of 13 elderberry shrubs (some multi-stem) occur within the Action Area and are described further in Section 4.3.4.4 below. Specifically, habitat as well as known occurrences for this species are recorded in the western portion of the Adjacent Other Lands within the riparian corridor of the Consumes River (CDFW 2022, USFWS 2022a). Isolated shrubs also occur in the outlying areas of the Action Area uplands, greater than 165 feet from the boundary of the Solar Development Area (Dudek 2022).



#### 4.3.4.4 Valley Elderberry Longhorn Beetle Protocol-Level Survey Results

Dudek conducted focused surveys for valley elderberry longhorn beetle within the Action Area on February 19 and 25, 2021, and January 12, 2022 (Figure 11). Surveys were conducted in accordance with the *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (USFWS 1999) and specifically focused on the assessment of known locations of elderberry shrubs to evaluate for evidence of valley elderberry longhorn beetle. Surveys were conducted prior to the onset of the typical known emergence period for adult valley elderberry longhorn beetle (i.e., March through June).

A total of 13 elderberry shrubs, all identified as *Sambucus nigra*, were assessed within the Action Area. Of these 13 shrubs, three, one of which are multi-stem, occur within the Solar Development Area and/or are within 165 feet (i.e., typical avoidance buffer area) of the Solar Development Area of the Action Area (Figure 11). No valley elderberry longhorn beetle, egg/larval galleries, or frass were observed on any of the shrubs during the surveys (see Table 7 below). Bore and/or exit holes were observed on four of the 13 shrubs, specifically on shrub ID 2, ID 6, ID 8, and ID 12; of which all occur within the Adjacent Other Lands of the Action Area. Shrub ID 2 is in fair condition and located approximately 385 feet from the Cosumnes River riparian habitat. Shrub ID 6 is in poor condition and located in an upland area approximately 1,650 feet from the riparian habitat. Shrub ID 6 is located within the Adjacent Other Lands directly adjacent to the Solar Development Area. Shrub IDs 8 and 12 are both in good condition and are located within 130 and 335 feet of riparian habitat, respectively. The condition of the bore holes observed reflect potential past use of boring insects and are not conclusive to valley elderberry longhorn beetle occupancy. No other elderberry shrub observations relevant to valley elderberry longhorn beetle were made during focused surveys (Dudek 2022).

**Table 7. Valley Elderberry Longhorn Beetle Survey Results Summary**

Shrub ID (Shrub-Stem)	Dead/ Alive <sup>1</sup>	General Condition <sup>2</sup>	Approx. no. of Stems	Approx. no. of Stems ≥1 in. DBH	Beetle Observed <sup>3</sup>	Eggs/ Larval Gallery <sup>3</sup>	Bore Holes <sup>3</sup>	Frass <sup>3</sup>	Other	Location (decimal degrees)	Habitat	Land Use	PSA Location <sup>4</sup>	Approx. Distance from Riparian Habitat (Ft)	Approx. Distance from Work Limits (Ft)	Notes
1-A	A	G	30	10	N	N	N	N	—	38.458791°, -121.191745°	Riparian	Adjacent agriculture	AOL	0, Within	1,545	Two shrubs present at this location on Cosumnes River levee slope.
1-B	A	G	25	7	N	N	N	N	—	38.458791°, -121.191745°	Riparian	Adjacent agriculture	AOL	0, Within	1,545	Two shrubs present at this location on Cosumnes River levee slope.
2-A	A	F	75	25	N	N	N	N	—	38.484704°, -121.189644°	Converted grassland	Agricultural	AOL	275	850	Three shrubs present at this location.
2-B	A	F	150	45	N	N	N	N	—	38.484704°, -121.189645°	Converted grassland	Agricultural	AOL	275	850	Three shrubs present at this location.
2-C	A	F	300	95	N	N	Y	N	—	38.484704°, -121.189646°	Converted grassland	Agricultural	AOL	275	850	Three shrubs present at this location. Bore holes only present on old bark (not new growth), in areas where outer bark has begun to sluff of exposing the cambium.
3-A	A	G	20	3	N	N	N	N	—	38.485637°, -121.192488°	Riparian	Adjacent agriculture	AOL	0, Within	1,640	Six shrubs present at this location on Cosumnes River levee slope.
3-B	A	G	25	5	N	N	N	N	—	38.485637°, -121.192488°	Riparian	Adjacent agriculture	AOL	0, Within	1,640	Six shrubs present at this location on Cosumnes River levee slope.
3-C	A	G	25	5	N	N	N	N	—	38.485637°, -121.192488°	Riparian	Adjacent agriculture	AOL	0, Within	1,640	Six shrubs present at this location on Cosumnes River levee slope.
3-D	A	G	30	5	N	N	N	N	—	38.485637°, -121.192488°	Riparian	Adjacent agriculture	AOL	0	1,640	Six shrubs present at this location on Cosumnes River levee slope.
3-E	A	G	45	7	N	N	N	N	—	38.485637°, -121.192488°	Riparian	Adjacent agriculture	AOL	0	1,640	Six shrubs present at this location on Cosumnes River levee slope.
3-F	A	G	55	10	N	N	N	N	—	38.485637°, -121.192488°	Riparian	Adjacent agriculture	AOL	0	1,640	Six shrubs present at this location on Cosumnes River levee slope.
4-A	A	P	15	4	N	N	N	N	—	38.470930°, -121.185041°	Converted grassland	Agricultural	SDA	4,200	0	Two shrubs present at this location. Isolated pasture near fence line.
4-B	A	F	35	6	N	N	N	N	—	38.470930°, -121.185041°	Converted grassland	Agricultural	SDA	4,200	0	Two shrubs present at this location. Isolated pasture near fence line.
5	A	F	8	3	N	N	N	N	—	38.479077°, -121.190647°	Converted grassland	Agricultural, Irrigation Drainage	AOL	1,550	590	On irrigation drainage at fence line.
6	A	P	400	85	N	N	Y	N	—	38.480429°, -121.188664°	Converted grassland	Agricultural	AOL	1,650	0	Highly degraded due to cattle use. Dead valley oak tree growing within and through

**Table 7. Valley Elderberry Longhorn Beetle Survey Results Summary**

Shrub ID (Shrub-Stem)	Dead/ Alive <sup>1</sup>	General Condition <sup>2</sup>	Approx. no. of Stems	Approx. no. of Stems ≥1 in. DBH	Beetle Observed <sup>3</sup>	Eggs/ Larval Gallery <sup>3</sup>	Bore Holes <sup>3</sup>	Frass <sup>3</sup>	Other	Location (decimal degrees)	Habitat	Land Use	PSA Location <sup>4</sup>	Approx. Distance from Riparian Habitat (Ft)	Approx. Distance from Work Limits (Ft)	Notes	
																	shrub. Bore holes not observed on new growth. Majority of new growth is less than 1 inch DBH. Only stems at base where dead valley oak tree is present are greater than 1 inch DBH. Cambium and heartwood exposure.
7	A	G	70	15	N	N	N	N	—	38.480377°, -121.195489°	Converted grassland	Adjacent agriculture	AOL	145	1,970	On adjacent Cosumnes River Levee.	
8	A	G	45	30	N	N	Y	N	—	38.484131°, -121.188719°	Converted agriculture	Adjacent agriculture	AOL	130	535	Elderberry shrub was obstructed by blackberry shrubs; located adjacent to barn.	
9	A	G	45	12	N	N	N	N	—	38.483398°, -121.189090°	Converted agriculture	Adjacent agriculture	AOL	200	535	Located adjacent to barn.	
10	A	G	80	20	N	N	N	N	—	38.484051°, -121.88989°	Converted agriculture	Adjacent agriculture	AOL	185	535	Located adjacent to barn.	
11	A	G	70	30	N	N	N	N	—	38.483701°, -121.18893°	Converted agriculture	Adjacent agriculture	AOL	150	535	Elderberry shrub was obstructed by blackberry shrubs; located adjacent to barn.	
12	A	G	90	50	N	N	Y	N	—	38.483701°, -121.189249°	Converted agriculture	Adjacent agriculture	AOL	335	485	Located adjacent to barn.	
13	A	G	30	5	N	N	N	N	—	38.470444°, -121.184741°	Converted grassland	Adjacent agriculture	SDA	4,300	0	Base of elderberry shrub was wrapped in barbed wire; located adjacent to barn.	

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# 5 Effects Analysis

## 5.1 Definition of Effects

The following section defines the distinct types of effects (i.e., impacts) that the Proposed Action may have on listed species within the Project Action Area.

- **Effects of the action** – all consequences to listed species or critical habitat that are caused by the Proposed Action, including the consequences of other activities that are caused by the Proposed Action (50 C.F.R. § 402.02).
- **Direct effects**- the direct or immediate effects of a Proposed Action on a species or its habitat. Direct effects may result from the Proposed Action and may include the effects of interrelated and interdependent actions. An “interrelated action” is an activity that is part of the Proposed Action, and which depends on the proposed action for its justification. An “interdependent action” is an activity that has no independent utility apart from the action under consultation
- **Indirect effects**- caused by or result from the Proposed Action, are later in time, and are reasonably certain to occur. Indirect effects may also include the effects of interrelated and interdependent actions. Indirect effects may occur outside the area directly affected by the action.
- **Cumulative effects**- comprise the effects of future state, local, and private actions not involving a federal action that are reasonably certain to occur within the Action Area under consideration.
- **No effect**- No effects, positive or negative, to species or habitat from the Proposed Action. No effect does not mean a small effect or an effect that is unlikely to occur. If effects are insignificant (i.e., small) or discountable, a “may affect, but not likely to adversely affect” determination is appropriate. A no effect determination does not require Section 7 consultation with the USFWS.
- **May affect, but not likely to adversely affect**- effects are beneficial, insignificant, or discountable. Beneficial effects have contemporaneous positive effects without any adverse effects on the species or habitat. Insignificant effects relate to the size of the impact and include those effects that are undetectable, not measurable, or cannot be evaluated and should never reach the scale where “take” occurs. Discountable effects are those extremely unlikely to occur. Based on the best scientific and commercial information available, a person would not be able to meaningfully measure, detect, or evaluate insignificant effects, or expect discountable effects to occur. This determination requires written concurrence from the USFWS.
- **May affect and is likely to adversely affect**- listed species or habitat are likely to be exposed to the Proposed Action or its environmental consequences and will respond in a negative manner to the exposure. This determination means that effects on species and habitat: (1) are significant in size and avoidance of “take” cannot be guaranteed, and (2) effects are not discountable (extremely unlikely to occur). A combination of beneficial and adverse effects is still “likely to adversely affect,” even if the net effect is neutral or positive. This determination requires formal consultation with USFWS.

## 5.2 Analysis of Effects

Large-scale solar facilities, such as the Proposed Action, have the potential to alter natural areas and impact sensitive biological resources, including habitats for federally listed wildlife. The Project anticipates the use of a single axis tracker system. The modules will be mounted on piles that are driven directly into the ground, and do not require the use of concrete. Some grading will be necessary to accommodate the engineering tolerances of the racking system, but it will be minimized to the extent practicable and is generally designed to maintain existing flow patterns across the site. Additionally, perennial vegetation will be maintained beneath the array following construction. The Proposed Action is designed to reduce environmental impacts by locating solar facilities outside of habitat for listed species to the extent practicable, and by minimizing direct and indirect effects on listed species. Maintaining the existing grade to the extent practicable, and minimizing impacts to upland (i.e., grassland) and aquatic habitats within the Action Area retains the existing hydrologic functions of the habitat, minimizes wetland habitat loss, minimizes the potential for soil erosion, and prevents wildlife habitat fragmentation.

Potential impacts on federally listed vernal pool fairy shrimp, vernal pool tadpole shrimp, and valley elderberry longhorn beetle were evaluated to determine potential effects on these species and their habitats resulting from the Proposed Action. Impacts resulting from operation and maintenance of the Proposed Action were also assessed. Avoidance and minimization measures (AMMs) are included within the description of the Proposed Action, see Section 3, and are also outlined further in Section 6 below. Species-Specific Effects.

### 5.2.1.1 Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp

Vernal pool fairy shrimp and vernal pool tadpole shrimp species and their habitat are subject to agency jurisdiction pursuant to regulations under FESA Guidelines.

Vernal pool fairy shrimp are a federally threatened species with a low likelihood to be present within the Solar Development Area of the Action Area. There are known occurrences and DCH for vernal pool fairy shrimp within 5 miles of the Action Area. The nearest DCH for vernal pool fairy shrimp is 1.3 miles southeast of the Action Area (USFWS 2022a). There is no critical habitat designation within the Action Area. There are several known occurrences for vernal pool fairy shrimp within 5 miles of the PSA, with the nearest being located within 0.25 miles of the PSA on the south side of Meiss Road, approximately 0.75 miles southeast of the intersection at Dillard Road (CDFW 2022).

Vernal pool tadpole shrimp are a federally endangered species with recorded known historic occurrences within the Solar Development Area of the Action Area. There are known occurrences and DCH for vernal pool tadpole shrimp within 5 miles of the Action Area. The nearest DCH for vernal pool fairy shrimp is 1.3 miles southeast of the Action Area (USFWS 2022a). There is no critical habitat designation within the Action Area.

For this BA, potential suitable habitat within the Action Area is considered to be wetlands and adjoining features (i.e., freshwater emergent wetlands, vernal pools, seasonal wetlands, pond, and seasonal wetland swales). Within the Action Area there are 69.75 acres of aquatic resources, of which 42.67 acres are suitable aquatic habitat. Within the Solar Development Area of the Action Area 5.84 acres of suitable habitat is present that is subject to an analysis of effects from the Proposed Action (Figure 6; Appendix F). No high (exceptional suitability/quality) quality habitat is present within the Solar Development Area of the Action Area. This includes aquatic resources features ephemeral drainage (0.74 acre), pond (0.38 acre), ditch (0.15 acre), seasonal wetland (3.10 acre), seasonal

wetland swale (0.71 acre), intermittent channel (0.45 acre), upland swale (0.07 acre), and vernal pool (0.25 acre). Of the 5.84 acres, 0.08 acres are permanently impacted, and 3.17 acres are temporarily impacted (direct affect), and 2.59 acres are indirectly affected due to their presence in the Solar Development Area of the Action Area and adjacency to construction. Effects are more thoroughly described in the sections below.

Dudek conducted protocol-level surveys for both dry and wet season large-listed branchiopods within the Action Area. No observation of vernal pool fairy shrimp or vernal pool tadpole shrimp were made during the protocol-level surveys. Note that negative survey findings (i.e., no presence) do not demonstrate species absence (Figures 9 and 10; Appendices D and E).

### Direct Effects

Direct effects on federally listed vernal pool branchiopods could result from the destruction of cysts/eggs and permanent modification of wetlands that alters the suitability of the habitat (i.e., filling of wetland basins, changes in surface or subsurface water flow, or destruction of hardpan).

Based on the Proposed Action, construction of new access roads, and placement of H-piles will result in permanent fill (direct effect) of 0.08 acre of suitable habitat for vernal pool brachiopods within the Solar Development Area of the Action Area. No other permanent fill is anticipated.

Cysts/eggs and mature vernal pool branchiopods could also be destroyed during temporary construction activities (direct effect) during the dry season as vehicles and equipment are necessary within the wetlands while installing the solar infrastructure. It is conservatively assumed that the entire wetland area that will host the solar array infrastructure (the area that will result in the 0.08 acre of permanent fill) would be subject to temporary construction disturbance of 3.17 acres of suitable habitat for vernal pool branchiopods within the Solar Development Area of the Action Area. This is a conservative approach, as in reality temporary construction activities would affect only those wetlands within the direct alignment of the solar support posts. Equipment would be unlikely to impact the entirety of the wetland area during installation activities.

### Indirect Effects

The suitable vernal pool branchiopod habitat (i.e., freshwater emergent wetlands, vernal pools, seasonal wetlands, pond, and seasonal wetland swales) that is within the Solar Development Area of the Action Area to be indirectly affected by the Proposed Action total 2.59 acres. Indirect impacts to Adjacent Other Lands are not anticipated by the Proposed Action.

Indirect effects from shading by the solar panels could render potential suitable wetland habitats unsuitable to support federally listed vernal pool branchiopods in the future. Indirect effects of cover by solar panels could include changes in water temperature, vegetative cover, species composition, hydroperiod due to changes in evapotranspiration rates, and changes in surface flows/runoff patterns. The Proposed Action would result in approximately 77% ground cover by solar panels (291.95 acres), leaving 27% open ground on average as compared to 100% open ground in the existing condition. However, even areas with solar panels will remain in a vegetated state due to the panels being elevated on a racking system. This would allow water flowing off the panels to disperse across the ground beneath the panels, allowing site hydrology to be maintained. Additionally, most of the solar panels will be sited in upland areas that will not provide any sort of shading to wetlands. Because vernal pool fairy

shrimp and vernal pool tadpole shrimp are highly adapted to the specific conditions found in vernal pool systems, it is unknown if they would survive the changes that would result from the wetlands being shaded by solar panels. Cover by panels intercepting precipitation and altering flows, and vegetation management that would occur in the surrounding uplands (e.g., regular mowing) could also have some indirect effects to adjacent aquatic vernal pool brachiopod habitat. Aquatic vernal pool brachiopod habitat that would be subject to indirect shading effects are the same features that could be subject to direct effects from ground disturbance associated with construction of the solar arrays.

### **Interrelated and Interdependent Effects**

The Proposed Action is a stand-alone Project and has independent utility. Therefore, no additional actions that could affect federally listed species vernal pool fairy shrimp and vernal pool tadpole shrimp are required to meet the purpose and need of the Proposed Action.

### **Cumulative Effects**

A FESA analysis must address cumulative effects from any future state or private activities not involving federal activities and which are likely to be implemented within the Action Area. Existing land uses in the vicinity of the Action Area are unlikely to change given the agricultural zoning and existing conservation easements. These areas are likely to remain in agricultural practice and open space. Therefore, the Proposed Action is not expected to contribute to additional cumulative effects on federally listed vernal pool brachiopods in the Action Area.

Furthermore, in relation to potential cumulative effects of the SSHCP Plan Area, listed brachiopod habitat (i.e., land cover type) within the Action Area comprises a small percentage of the inventory of those lands in the SSHCP Preserve Planning Unit 5 and an even smaller percentage of the modeled habitat in the SSHCP Plan Area. Specifically, the Proposed Action impacts an extremely small percentage of the SSCHP listed species habitat in SSHCP Preserve Planning Unit 5. During the 30-year life of the Project, approximately 0.001% of the inventory of seasonal wetlands, and less than 2.02% of swales, and 1.04% of vernal pools in Planning Unit 5 would not be available for acquisition by the South Sacramento Conservation Agency. However, on and off-site mitigation for the Proposed Action, which would be equivalent to the relevant AMMs in the SSHCP, are included in the Project compensatory mitigation plan (see Section 6 below).

### **Summary of Effects for Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp**

Based on the analysis of effects detailed above, the Proposed Action would indirectly, and directly affect the potential suitable habitat for federally listed vernal pool fairy shrimp and vernal pool tadpole shrimp within the Solar Development Area of the Action Area; therefore, the Project may affect and is likely to adversely affect the listed species. A summary of impacts by resources type have been provided below in Table 7. There are no interrelated, independent, and/or cumulative impacts by the Proposed Action. Measures to avoid, minimize, and mitigate affects to jurisdictional wetlands and waters that provide potential listed brachiopod habitat are provided in section 6 of this BA.



**Table 8. Summary of Impacts on Federally Listed Branchiopod Suitable Habitat within the Solar Development Area of the Action Area**

Aquatic Resource Type	Indirect Impact (acres)	Direct Impact (acres)		Totals (acres)
		Temporary	Permanent	
Ephemeral drainage	0.64	0.08	0.02	0.74
Intermittent channel	0.45	0.004	0	0.45
Pond	0.37	0.005	0	0.38
Roadside ditch	0.15	0	0.001	0.15
Seasonal wetland	0.44	2.63	0.03	3.10
Seasonal wetland swale	0.43	0.24	0.04	0.71
Upland Swale	0.04	0.03	0.002	0.07
Vernal pool	0.07	0.18	0.001	0.25
<b>Total (acres)</b>	<b>2.59</b>	<b>3.17</b>	<b>0.08</b>	<b>5.84</b>

**Notes:** Suitable habitat for federally listed branchiopods excludes the following aquatic resources from this analysis: intermittent drainage, perennial drainage, and upland swale.

### 5.2.1.2 Valley Elderberry Longhorn Beetle

Valley elderberry longhorn beetle and the elderberry shrub habitat (i.e., the species host plant) are subject to agency jurisdiction pursuant to regulations under FESA Guidelines.

Valley elderberry longhorn beetle is a federally threatened species with a low likelihood to be present within the Solar Development Area of the Action Area. There is suitable habitat within the Action Area. A total of 13 elderberry shrubs, some multi-stem, occur within the Action Area and are described further in Section 4.3.4.4 above. Specifically, habitat as well as known occurrences for this species are recorded in the Action Area in the western portion of the Adjacent Other Lands within the riparian corridor of the Consumes River (CDFW 2022, USFWS 2022a). Isolated shrubs also occur in the upland locations of the Action Area (Dudek 2022). There is no critical habitat designation within the Action Area for valley elderberry longhorn beetle.

For this BA, suitable habitat within the Action Area is considered to be elderberry shrubs that are within the riparian corridor (i.e., the Consumes River). Suitable habitat within the Action Area is considered to be elderberry shrubs located within uplands (i.e., grasslands), specifically those that are within 2,256 feet (USFWS 2022f) of the riparian corridor.

Dudek conducted protocol-level surveys for valley elderberry longhorn beetle within the Action Area. No observations were recorded during the protocol-level surveys. Note that negative survey findings (i.e., no presence) does not demonstrate species absence (Figures 11).

#### Direct Effects

Direct effects on federally listed valley elderberry longhorn beetle could result from the removal, trimming, herbicides, dust, and erosion to elderberry shrubs. Direct impacts to elderberry shrubs can occur either at a habitat scale (i.e., shrubs located within the Consumes River Corridor of the Action Area), or at an individual shrub scale (i.e., isolated shrubs located within the uplands of the Action Area). Activities that reduce the suitability of an area

for elderberry plants or elderberry recruitment and increase fragmentation may also have impacts to mating, foraging, and dispersal of valley elderberry longhorn beetle.

The USFWS states that “If the project site is non-riparian and contains elderberry shrubs, we use exit hole surveys to evaluate the site for potential occupancy. Exit hole surveys are not essential in riparian areas but may be conducted to assess the level and significance of adverse effects. The presence of exit holes in a shrub increases the likelihood that the shrub is occupied by valley elderberry longhorn beetle; however, a lack of exit holes does not preclude occupancy by the valley elderberry longhorn beetle. In the absence of exit holes, we recommend that a biologist evaluate the project area using the following criteria: (1) Is there a riparian area, elderberry shrubs, or known VELB records within 2,526 feet of the proposed project; and (2) Isolated, non-riparian elderberry clumps are less likely to be occupied or become colonized by VELB and those beyond 2,526 feet from the nearest elderberry clump become increasingly less likely to be occupied. Therefore, a qualified biologist can assess the distance of the elderberry shrub from the nearest riparian area, elderberry shrub, and known occupied elderberry location” (USFWS 2022f).

Based on the Proposed Action, three elderberry shrubs (i.e., shrub ID 4, 6, and 13), one of which is multi stem, occur within the Solar Development Area and/or within 165 feet of the Action Area (USFWS 2022f). Of these shrubs, none documented exit holes, frass, or beetle observations during surveys. All these shrubs reside in the uplands (i.e., non-riparian areas) of the Action Area, with shrub ID 4 being 4,200 feet outside of the riparian corridor, shrub ID 6 being 1,650 feet outside of the riparian corridor, and shrub ID 13 being 4,300 feet outside the riparian corridor. Therefore, two of the of shrubs within the Solar Development Area of the Action Area are greater than 2,256 feet from a riparian corridor, are isolated individuals, and did not have recordable observations of valley elderberry longhorn beetle at the time of surveys.

The Proposed Action will remove shrub ID 4 and shrub ID 13 during construction activities. Therefore, the Project will have direct effects on two of the host plants for valley elderberry longhorn beetle. Shrub ID 6 will be avoided and a USFWS 165 foot buffer will be established to avoid direct effects and will therefore have “no effect”.

### Indirect Effects

In addition to the three elderberry shrubs detailed in the direct impacts section above, 10 additional elderberry shrubs were mapped and surveyed within the Action Area. These 10 additional shrubs occur within the Adjacent Other Lands of the Action Area. Construction activities associated with the Proposed Action will not remove, trim, or transplant any of the shrubs within the Adjacent Other Lands of the Action Area. No fragmentation of riparian habitat will occur within the Action Area, and isolated non-riparian elderberry shrubs will remain undisturbed with a 165-foot avoidance buffer installed during construction activities as needed. Additionally, conservation measures, as noted in Section 6 below, will be employed through the duration of the Proposed Action. Based on this understanding, there are no indirect effects anticipated by the Proposed Action on the remaining 10 elderberry shrubs and valley elderberry longhorn beetle.

### Interrelated and Interdependent Effects

The Proposed Action is a stand-alone Project and has independent utility. Therefore, no additional actions that could affect federally listed valley elderberry longhorn beetle are required to meet the purpose and need of the Proposed Action.

## Cumulative Effects

A FESA analysis must address cumulative effects from any future state or private activities not involving federal activities and which are likely to be implemented within the Action Area. Existing land uses in the Action Area are unlikely to change given the agricultural zoning and existing conservation easements. These areas are likely to remain in agricultural practice and open space. Further, existing and /or future agricultural activities within the Action Area will not result in cumulative adverse effects by the Proposed Action because future agricultural activities within the Action Area will remain consistent with the environmental baseline and will not change. Therefore, the Proposed Action is not expected to contribute to additional cumulative effects on federally listed valley elderberry longhorn beetle in the Action Area.

Furthermore, in relation to potential cumulative effects of the SSHCP Plan Area, valley elderberry longhorn beetle habitat (i.e., land cover type) is not present within the Solar Development Area of the Action Area. Therefore, the Proposed Action will not cumulatively affect the overarching goals and objectives of the SSHCP.

## Summary of Effects for Valley Elderberry Longhorn Beetle

Based on the analysis of effects detailed above, the potential effects from the Proposed Action to valley elderberry longhorn beetle “may affect, but not likely to adversely affect” valley elderberry longhorn beetle. Conservation Measures to avoid adverse effects to direct impacts are provided in section 6 of this BA. There are no interrelated, independent, and/or cumulative impacts of the Proposed Action.

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## 6 Conservation Measures

The following conservation measures are proposed to avoid and minimize effects on federally listed vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, and their habitat. By adhering to these avoidance and minimization measures, the Proposed Action will reduce the potential direct and indirect impacts to these species. To ensure their implementation, these measures would be included as conditions of any permits granted and would be included in the Project specifications.

### 6.1 SSHCP Consistency

The SSHCP streamlines federal and state permitting processes for SSHCP-covered development and infrastructure projects, while protecting habitat, open space, and agricultural lands (SSHCP 2021). The SSHCP is led by a multi-jurisdiction collaborative that includes Sacramento County, the Cities of Rancho Cordova and Galt, the Sacramento County Water Agency, the Sacramento Regional County Sanitation District, and the Capital Southeast Connector Joint Powers Authority (SSHCP 2021). The SSHCP does not expressly include utility-scale solar as a potential covered activity.

The Proposed Action is required to obtain permits and approvals from the USFWS, USACE, CDFW, and RWQCB, and will further minimize and mitigate impacts on natural resources. The USFWS applied the regulatory standards of these and other environmental agencies in their review and approval of the SSHCP. Therefore, the Project mitigation strategy is designed to achieve the mitigation standards applicable to covered activities under the SSHCP. Therefore, for this Project, a SSHCP Consistency Analysis (Appendix H) was prepared for the Project as a supplement to the final Biological Technical Report (Appendix G). The purpose of this consistency analysis is to provide an in-depth evaluation of the Project's consistency with the SSHCP. Mitigation for the Project includes mitigation measures that are equivalent to the relevant AMMs in the SSHCP. These AMMs, coupled with compensatory mitigation for unavoidable impacts, would ensure that Project effects on SSHCP Covered Species would be avoided, minimized, and mitigated so that the Project is consistent with the SSHCP.

### 6.2 Avoidance and Minimization Measures

The significance criteria used to evaluate effects to biological and aquatic resources is based on federal, state, and local regulatory guidance pertaining to potential jurisdictional resources and features occurring only within the Solar Development Area of the Action Area. Applicant proposed AMMs include those measures that would avoid, minimize, or otherwise mitigate potential direct and indirect effects, as detailed in section 5 above, to federally listed vernal pool fairy shrimp, vernal pool tadpole shrimp, and their habitat.

The following assumptions were used in assessing the magnitude of possible impacts on federally listed species.

- All construction staging (including vehicle parking), storage, and access areas would be restricted to the Solar Development Area within the Action Area.
- Construction traffic will be directed along access roads until they reach the point where active work is occurring to limit soil compaction and disturbance to the site.

- Grading will be completed to maintain the overall site drainage patterns that currently exist across the Action Area.
- Driving of equipment through jurisdictional aquatic resources where impacts are unavoidable will be limited to the dry season only for temporary construction impacts. Impacts to Adjacent Other Lands of the Action Area will be avoided, which consists of avoidance to the Cosumnes River and associated riparian corridor.
- The Proposed Action will utilize best management practices as established via NEPA, CEQA, and other permits and permissions necessary for construction of the Proposed Action.

### **AMM-01: Worker Environmental Awareness Training**

The Applicant shall assign a qualified biologist to conduct a Worker Environmental Awareness Program (WEAP). The WEAP should be prepared to educate staff on the presence of special-status species, habitats, and protected wetlands with potential to occur, or that are known to occur, within the Action Area. The program should describe their identification, habitat requirements, and penalties for species impacts, as well as immediate steps to take should special-status plant species be observed by staff on site. This WEAP should include biological resource requirements provided in agency permits or agreements, and any species-specific plans. The WEAP can be provided in the form of a handout and/or video presentation. Staff that attend the training should fill out a sign-in sheet indicating that they completed the training.

### **AMM-02: Environmentally Sensitive Area Exclusions**

The applicant has agreed to containing all construction and operation activities within the Solar Development Area. The periphery of the Solar Development Area will be clearly delineated so that no work occurs in Adjacent Other Lands. Buffers for aquatic resources and elderberry shrubs will be employed. For aquatic resource buffers that may be indirectly impacted within the Solar Development Area, they will be returned to pre-existing conditions the maximum extent practicable. Specifically, flagging, fencing (silt fence, orange safety barrier fence, or equivalent) shall be installed for these buffer areas. All direct construction activities are prohibited within this buffer area unless approval is received to encroach on the buffer via formal consultation with USFWS. Additionally, the applicant has designed the Proposed Action to avoid impacts of the to the maximum extent feasible. The Applicant shall install fencing, stakes/flagging, or other appropriate barriers (e.g., chain-link fence) between the active Solar Development Area and the Adjacent Other Lands to prevent inadvertent encroachment into sensitive habitat areas. The contractor will be responsible for maintaining the fence or other demarcation during construction and ensuring that no construction personnel, equipment, or runoff or sediment from the construction area enters environmentally sensitive areas. If total avoidance is achieved, no further action is required.

### **AMM-03: Construction Monitoring**

The Applicant shall assign a qualified biologist to conduct periodic monitoring (e.g., a minimum of once per week) during construction activities that involve ground disturbance (e.g., vegetation removal, grading, road construction) within the non-developed portions of the Solar Development Area within the Action Area. The purpose of the construction monitoring is to verify that AMMs are properly implemented to protect sensitive resources and that the Project complies with all applicable permit requirements and agency conditions of approval. The biologist will

inspect the barrier fencing (from AMM-02) and any required exclusion fencing around environmentally sensitive areas regularly and will communicate any issues to the construction manager or construction manager's delegate.

#### **AMM-04: Maintain Hydrology**

To avoid indirect effects on wetland hydrology outside the Solar Development Area, the Applicant shall ensure the Project is designed to maintain existing drainage patterns as they exit the Action Area so there is no reduction or increase in existing surface water flow offsite into adjacent habitat.

#### **AMM-05: Aquatic Resources Avoidance**

The Proposed Action will be designed to eliminate and reduce direct and indirect impacts to aquatic resources (i.e., federally listed branchiopod habitat) to the maximum extent possible. For direct and/or indirect impacts that cannot be avoided, the Applicant shall propose a compensatory mitigation framework, as detailed in section 6.3 below, to ensure no net loss of species or habitat.

## **6.3 Compensatory Mitigation**

The following Applicant proposed approach for compensatory mitigation summarizes the proposed biological and aquatic resource mitigation for potential direct and indirect impacts to aquatic resources (i.e., potential habitat for vernal pool fairy shrimp and vernal pool tadpole shrimp) and elderberry shrubs (potential habitat for valley elderberry longhorn beetle) from the Proposed Action (Appendix C).

### **6.3.1 Mitigation for Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp**

For this compensatory mitigation approach, the Applicant assumes presence/occupancy of vernal pool fairy shrimp and vernal pool tadpole shrimp within the Action Area. Therefore, the mitigation ratio's proposed reflect assumed occupancy of the aquatic resources that provide suitable habitat for these species.

For resources within the Adjacent Other Lands of the Action Area, the Applicant assumes "no effect" through avoidance and implementation of AMMs.

For resources within the Solar Development Area of the Action Area that "may affect, but not likely to adversely affect" or that "may affect, and likely to adversely affect," the Applicant proposes mitigation that will utilize a 2:1 ratio for indirect impacts, a 1:1 ratio for direct temporary impacts, and a 3:1 ratio for direct permanent impacts. Given these ratios, the total direct and indirect impacts would require a total of 8.63 acres of mitigation, as detailed in Table 9 below.

Compensatory mitigation will utilize onsite habitat preservation and/or mitigation/preservation credit purchase from existing in-lieu fee programs or banks. The Project site is within the service area for the Sacramento District California In-Lieu Fee Program the following existing banks: Clay Station Mitigation Bank, Bryte Ranch Conservation Bank, Laguna Creek Mitigation Bank, and Van Vleck Ranch Mitigation Bank. The biological and aquatic resource values of the Adjacent Other Lands within the Action Area, outside the Solar Development Area of the Project, are described in the Biological Resources Compensatory Mitigation Plan, which provides documentation of suitability for compensatory mitigation (SLLC 2022e).

**Table 9. Compensatory Mitigation for Federally Listed Branchiopods Suitable Habitat within the Solar Development Area of the Action Area**

Aquatic Resource Type	Indirect		Direct- Temporary		Direct- Permanent		Total Mitigation (Acreage)
	Impact (acres)	Mitigation 2:1	Impact (acres)	Mitigation 1:1	Impact (acres)	Mitigation 3:1	
Ephemeral drainage	0.64	1.28	0.08	0.08	0.02	0.06	1.42
Intermittent channel	0.45	0.9	0.004	0.004	0	0	0.90
Pond	0.37	0.74	0.005	0.005	0	0	0.75
Roadside ditch	0.15	0.3	0	0	0.001	0.003	0.30
Seasonal wetland	0.44	0.88	2.63	2.63	0.03	0.09	3.60
Seasonal wetland swale	0.43	0.86	0.24	0.24	0.04	0.12	1.22
Upland swale	0.04	0.08	0.03	0.03	0.002	0.006	0.12
Vernal pool	0.07	0.14	0.18	0.18	0.001	0.003	0.32
<b>Total (acres)</b>	<b>2.59</b>	<b>5.18</b>	<b>3.17</b>	<b>3.17</b>	<b>0.08</b>	<b>0.28</b>	<b>8.63</b>

### 6.3.2 Mitigation for Valley Elderberry Longhorn Beetle

For this compensatory mitigation approach, the Applicant does not exclude the presence or absence of Valley Elderberry Longhorn Beetle within the Action Area. The mitigation ratio's proposed reflect recommendations detailed by the USFWS for non-riparian uplands that are greater than 2,256 feet from the Consumes River Riparian Corridor (USFWS 2022f). For resources within the Adjacent Other Lands of the Action Area, the Applicant assumes "no effect" through avoidance and implementation of AMMs.

For resources within the Solar Development Area of the Action Area that "may affect, but not likely to adversely affect" (i.e., direct impacts) the Applicant proposes mitigation that will utilize a 1:1 ratio. Compensatory mitigation will utilize onsite habitat preservation and/or mitigation/preservation credit purchase from existing in-lieu fee programs or banks. The Project site is within the service area for the Sacramento District California In-Lieu Fee Program the following existing banks: Clay Station Mitigation Bank, Bryte Ranch Conservation Bank, Laguna Creek Mitigation Bank, and Van Vleck Ranch Mitigation Bank. The biological resource values of the Adjacent Other Lands within the Action Area, outside the Solar Development Area of the Project, are described in the Biological Resources Compensatory Mitigation Plan, which provides documentation of suitability for compensatory mitigation (SSLLC 2022e).



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## 7 Conclusion and Determination

In accordance with Section 7 of the FESA, this BA identifies the potential effects of the Proposed Action on considered species, vernal pool fairy shrimp, vernal pool tadpole shrimp, and valley elderberry longhorn beetle, within the Action Area, which is comprised of the Solar Development Area and surrounding vicinity called the Adjacent Other Lands.

No federally listed branchiopods were observed during protocol-level surveys conducted in the wet and dry seasons. During pre-application meetings, the USFWS indicated that based on the known occurrences and location of DCH in the region for these species, they would like to see additional seasons of protocol level surveys or would apply a assumed presence determination if those surveys could not be conducted in the timeframe consistent with the Proposed Action milestones. Therefore, for the purpose of this BA, it is assumed that suitable aquatic habitat (i.e., freshwater emergent wetlands, vernal pools, seasonal wetlands, pond, and seasonal wetland swales) for vernal pool fairy shrimp and vernal pool tadpole shrimp is present in the Action Area. The resources within the Adjacent Other Lands portion of the Action Area will be avoided and AMMs will be applied to reduce impacts to vernal pool fairy shrimp and vernal pool tadpole shrimp. The aquatic resources within the Solar Development Area of the Action Area will be impacted as follows- a total of 2.59 acres would be indirectly impacted, 3.17 acres would direct temporarily be impacted, and 0.08 would be direct permanently impacted. The Applicant proposes mitigation that will utilize a 2:1 ratio for indirect impacts, a 1:1 ratio for direct temporary impacts, and a 3:1 ratio for direct permanent impacts. Given these ratios, the total direct and indirect impacts would require a total of 8.63 acres of mitigation.

In addition, no valley elderberry longhorn beetles were observed on the 13 elderberry shrubs identified within the Action Area. For this BA, two elderberry shrubs have the potential for direct impacts; however, are noted as not containing observations of valley elderberry longhorn beetle, are over 2,256 feet from a riparian corridor (i.e., located in non-riparian uplands). Due to their location and proximity to a riparian corridor, direct removal of these two shrubs will not be defined as fragmentation of habitat suitable for valley elderberry longhorn beetle. Transplantation for direct effects is not recommended for elderberry plants within the Action Area due to the unlikelihood of survival. As such, direct impacts will be mitigated at a 1:1 ratio and secured in accordance with the *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (Desmocerus californicus dimorphus)* (USFWS 2022f) and the *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (USFWS 1999).

In summary, the following determinations have been made for the considered species:

- Vernal pool fairy shrimp- may affect and is likely to adversely affect the listed species.
- Vernal pool tadpole shrimp- May affect and is likely to adversely affect the listed species.
- Valley elderberry longhorn beetle- may affect, but not likely to adversely affect the listed species.

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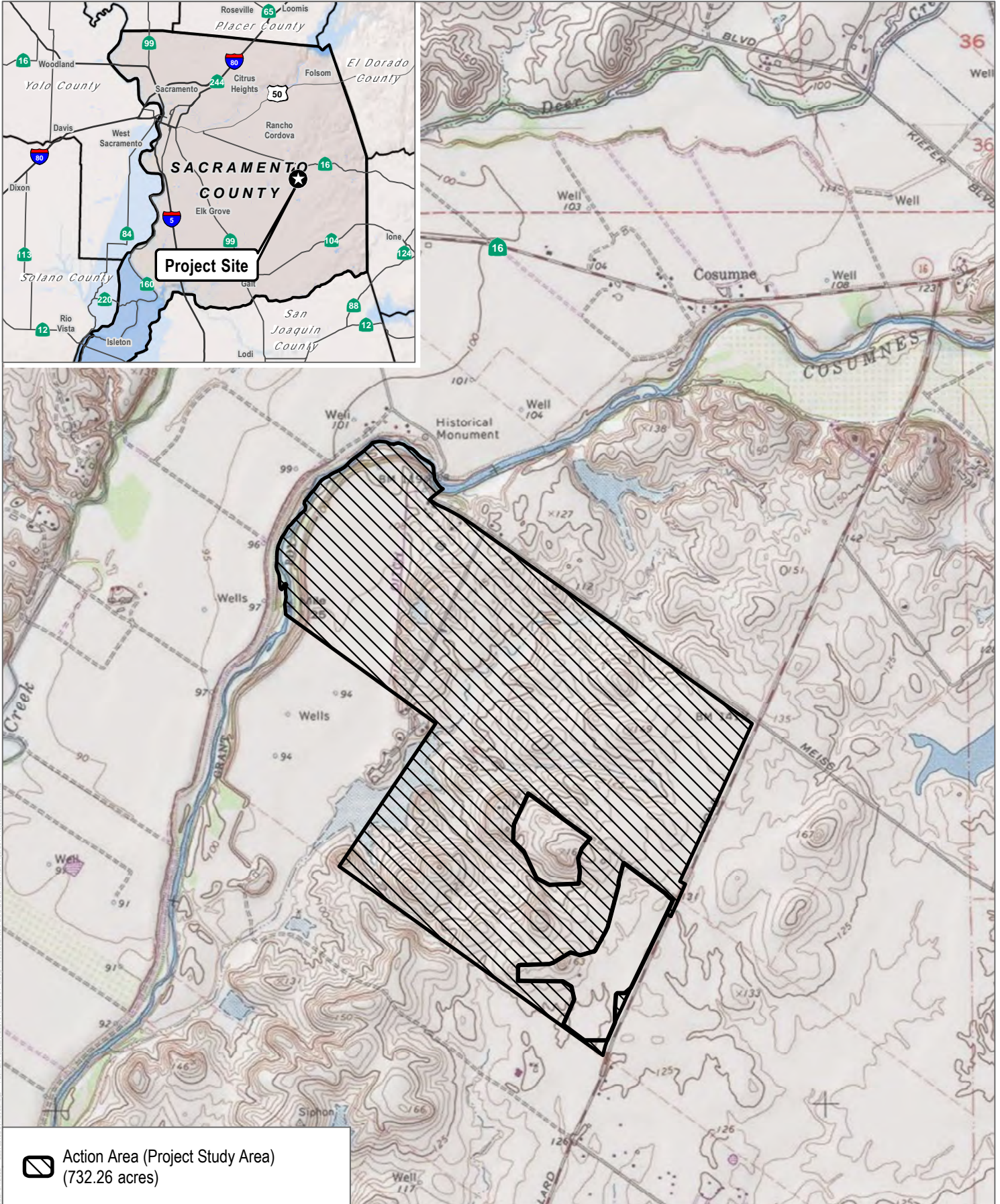
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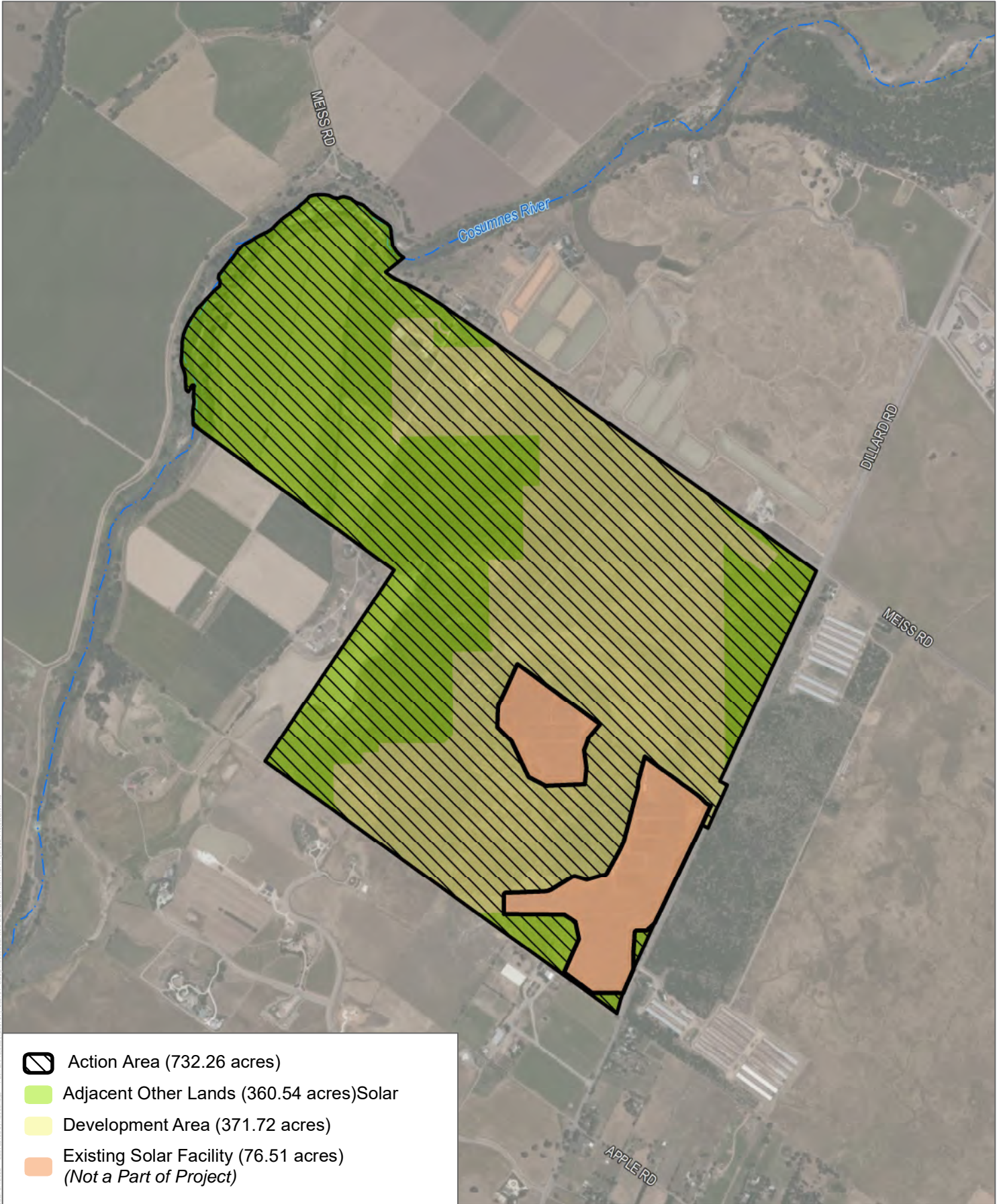
SOURCE: USGS 7.5-Minute Series Sloughouse Quadrangle, Environmentally Preferred Alternative Site Plan - DESRI (6/24/2022)

**FIGURE 1**

**Project Location**

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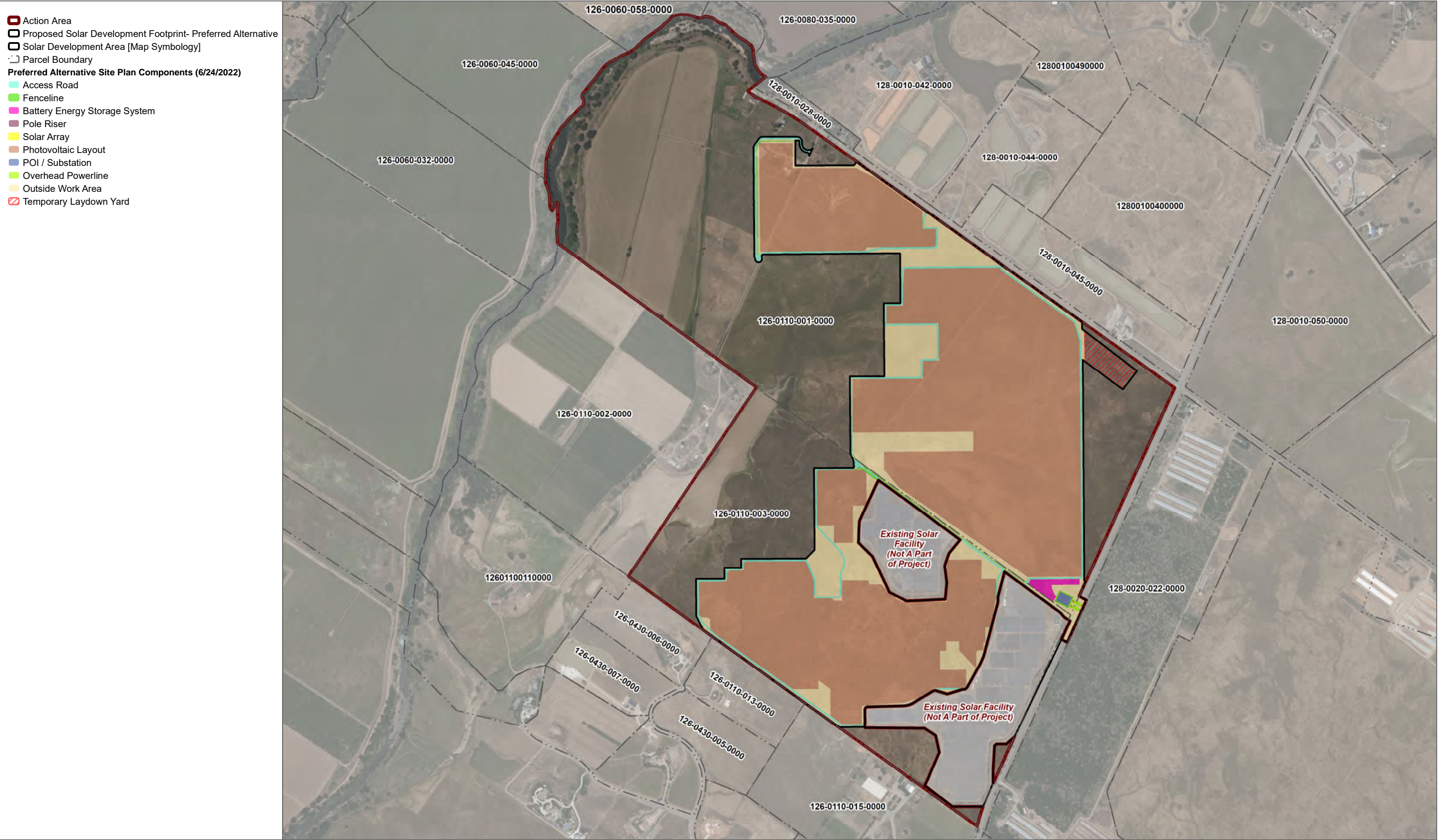


SOURCE: Bing Maps (2020), Sacramento County (2019), Environmentally Preferred Alternative Site Plan - DESRI (6/24/2022)

**FIGURE 2**  
Project Site

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SOURCE: Bing Maps 2021, BW Engineers 6/24/2022



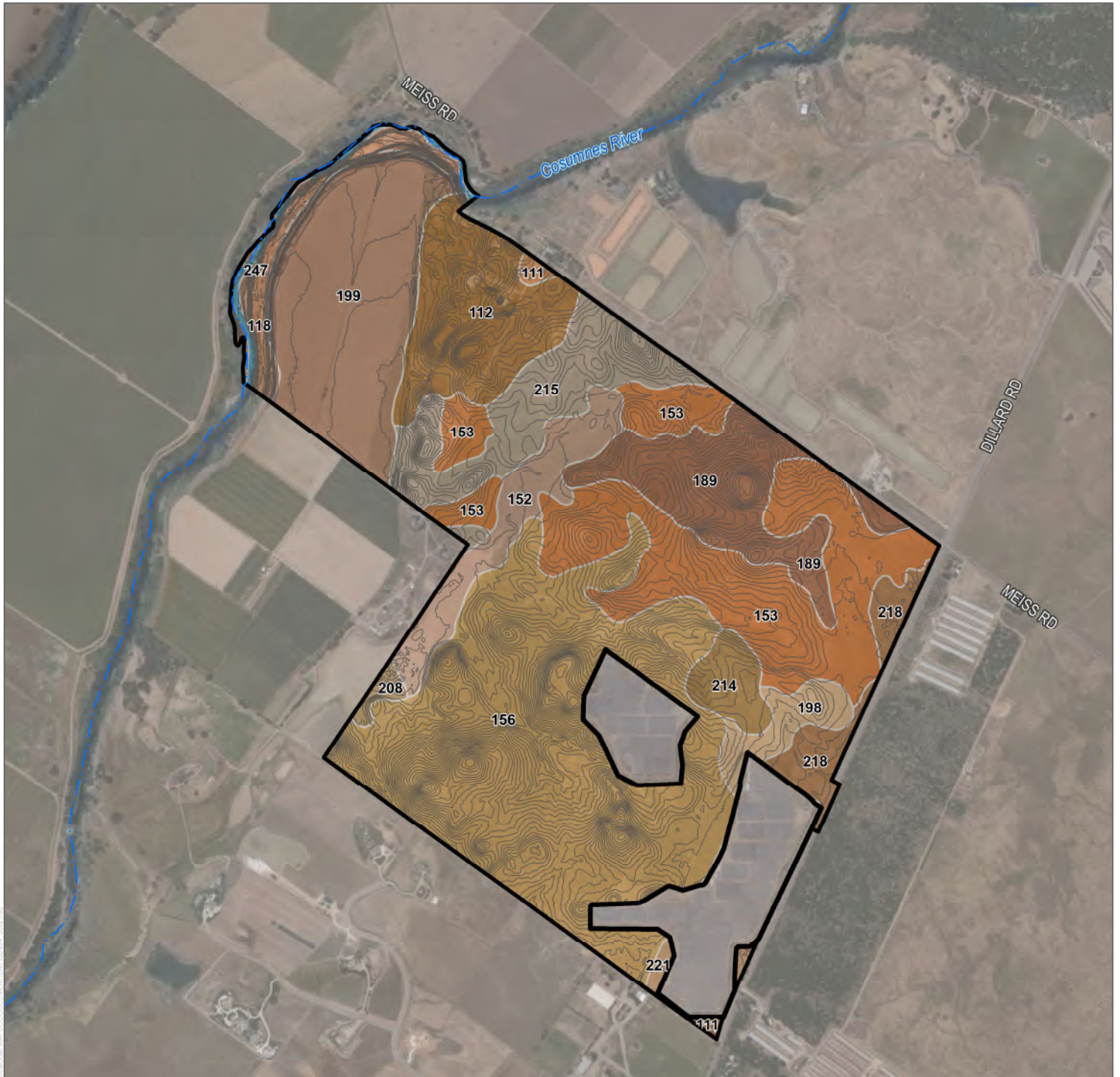
FIGURE 3

Site Plan - Environmentally Preferred Alternative

Biological Assessment for the Sloughhouse Solar Project

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- Action Area (732.26 acres)
  - - - NHD Flowline
  - 2-foot Contours
- Soil Classification**
- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #f4a460; margin-right: 5px;"></span> 111 : Bruella sandy loam, 0 to 2 percent slopes</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #c85130; margin-right: 5px;"></span> 112 : Bruella sandy loam, 2 to 5 percent slopes</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #e69d00; margin-right: 5px;"></span> 118 : Columbia sandy loam, drained, 0 to 2 percent slopes, occasionally flooded</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #f4a460; margin-right: 5px;"></span> 152 : Galt clay, 0 to 2 percent slopes</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #c85130; margin-right: 5px;"></span> 153 : Galt clay, 2 to 5 percent slopes</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #f4a460; margin-right: 5px;"></span> 156 : Hadselville-Pentz complex, 2 to 30 percent slopes</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #c85130; margin-right: 5px;"></span> 189 : Peters clay, 1 to 8 percent slopes</li> </ul> | <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #f4a460; margin-right: 5px;"></span> 198 : Redding gravelly loam, 0 to 8 percent slopes</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #c85130; margin-right: 5px;"></span> 199 : Reiff fine sandy loam, 0 to 2 percent slopes, occasionally flooded</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #e69d00; margin-right: 5px;"></span> 208 : Sailboat silt loam, drained, 0 to 2 percent slopes, occasionally flooded</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #f4a460; margin-right: 5px;"></span> 214 : San Joaquin silt loam, 0 to 3 percent slopes</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #c85130; margin-right: 5px;"></span> 215 : San Joaquin silt loam, 3 to 8 percent slopes</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #e69d00; margin-right: 5px;"></span> 216 : San Joaquin-Durixeralfs complex, 0 to 1 percent slopes</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #f4a460; margin-right: 5px;"></span> 217 : San Joaquin-Galt complex, leveled, 0 to 1 percent slopes</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #c85130; margin-right: 5px;"></span> 218 : San Joaquin-Galt complex, 0 to 3 percent slopes</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #e69d00; margin-right: 5px;"></span> 221 : San Joaquin-Xerarents complex, leveled, 0 to 1 percent slopes</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #00a0e3; margin-right: 5px;"></span> 247 : Water</li> </ul> |
|--|---|

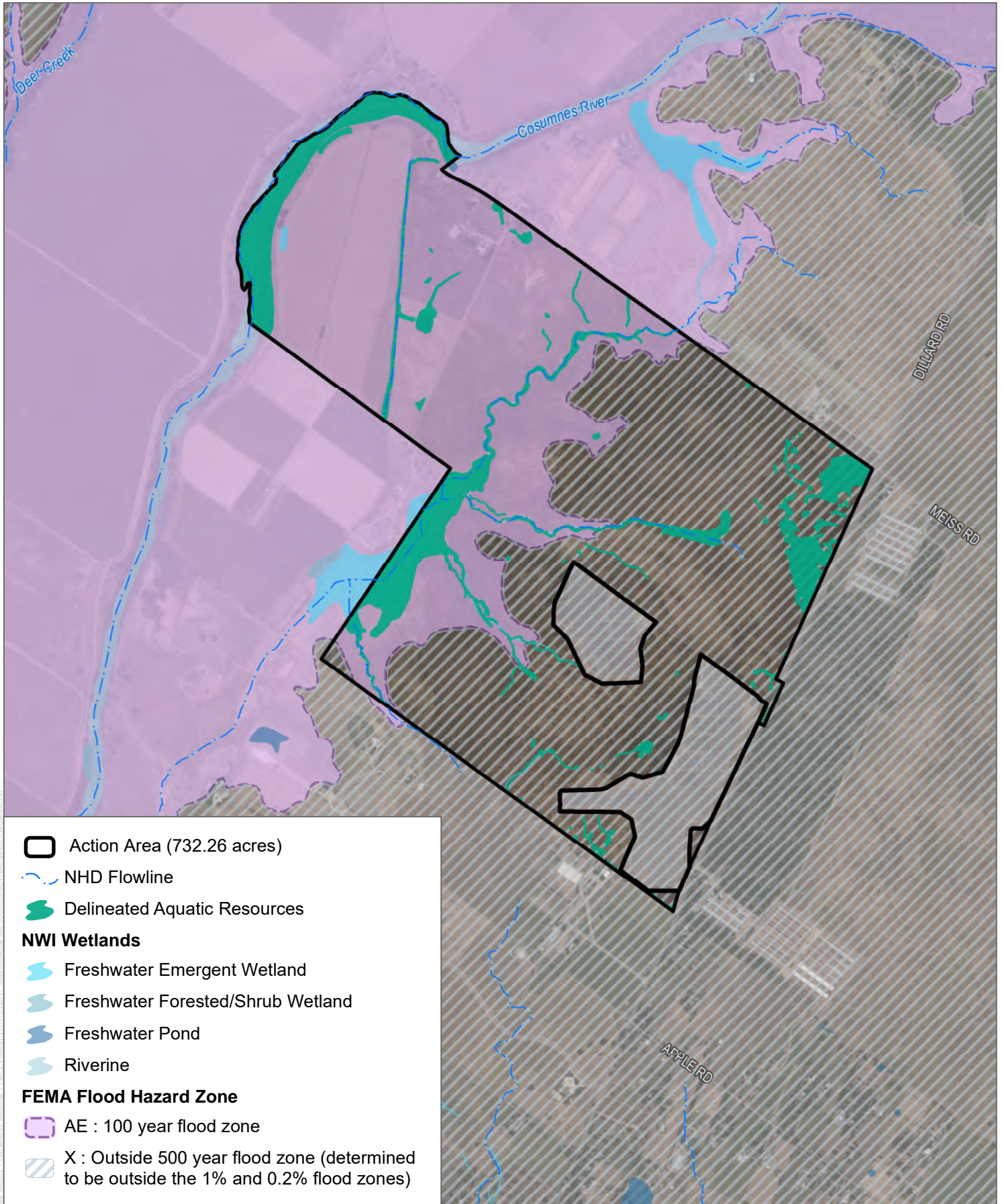
SOURCE: Bing Maps (2020), Sacramento County (2019), USDA 2019, Environmentally Preferred Alternative Site Plan - DESRI (6/24/2022)

**FIGURE 4**

**Soil and Terrain Setting**

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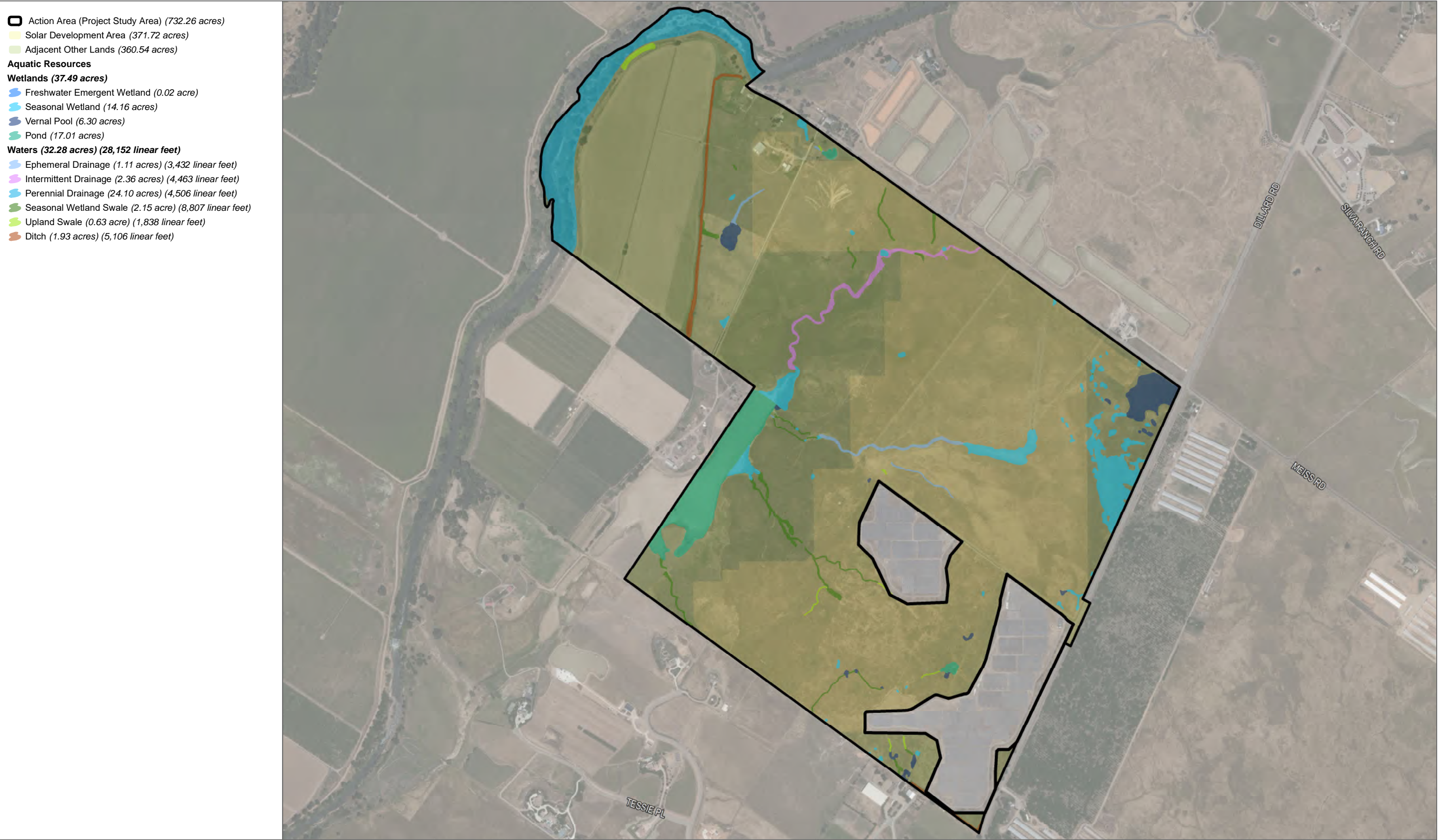


SOURCE: Bing Maps (2020), NHD (2019), Sacramento County (2019), USFWS (2020), FEMA (2019), Aquatic Resources (SLLC 2022), Environmentally Preferred Alternative Site Plan - DESRI (6/24/2022)

**FIGURE 5**  
Hydrologic Setting

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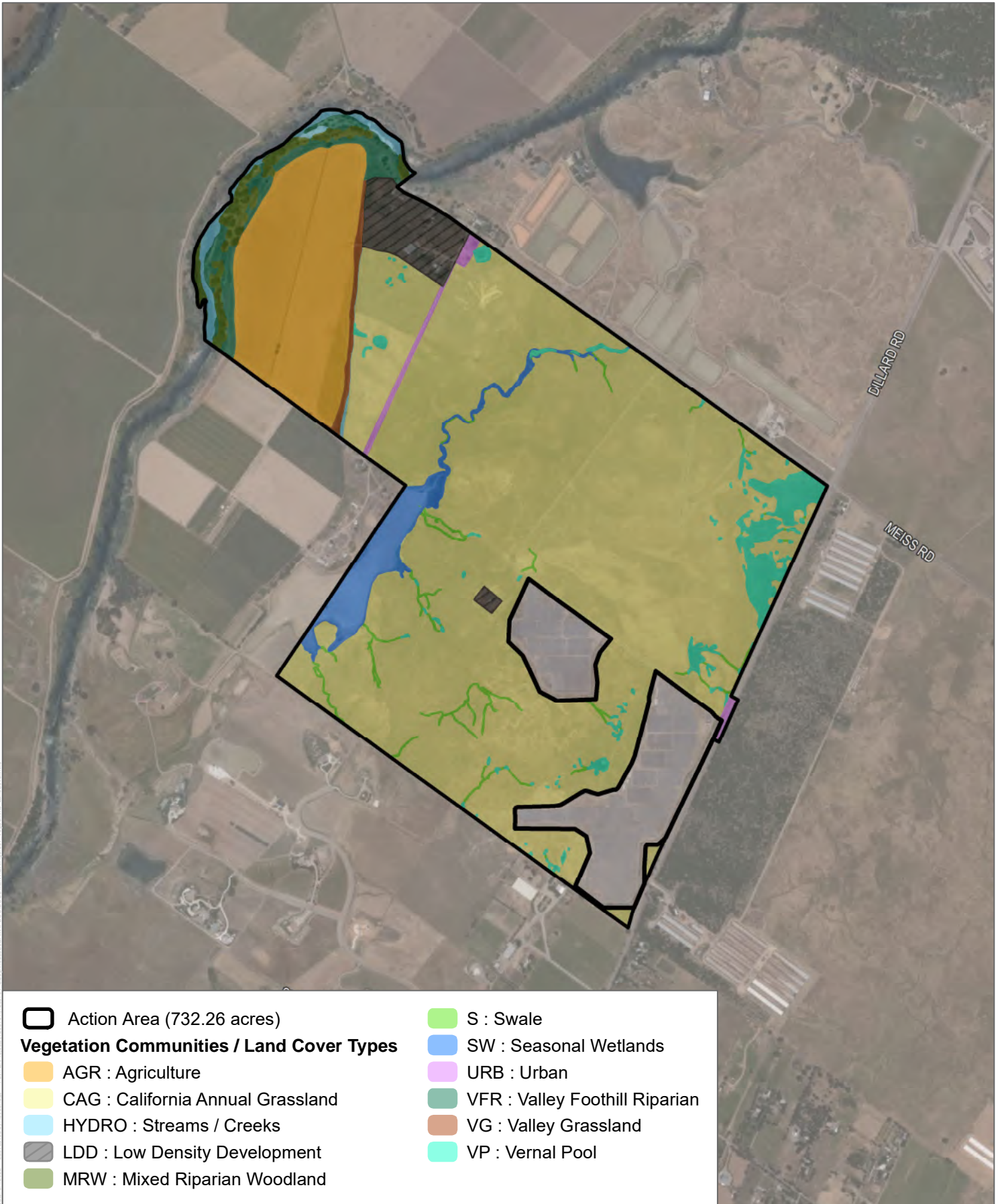


- Action Area (Project Study Area) (732.26 acres)
- Solar Development Area (371.72 acres)
- Adjacent Other Lands (360.54 acres)
- Aquatic Resources**
- Wetlands (37.49 acres)**
- Freshwater Emergent Wetland (0.02 acre)
- Seasonal Wetland (14.16 acres)
- Vernal Pool (6.30 acres)
- Pond (17.01 acres)
- Waters (32.28 acres) (28,152 linear feet)**
- Ephemeral Drainage (1.11 acres) (3,432 linear feet)
- Intermittent Drainage (2.36 acres) (4,463 linear feet)
- Perennial Drainage (24.10 acres) (4,506 linear feet)
- Seasonal Wetland Swale (2.15 acre) (8,807 linear feet)
- Upland Swale (0.63 acre) (1,838 linear feet)
- Ditch (1.93 acres) (5,106 linear feet)

SOURCE: Bing Maps (2020), Aquatic Resources Delineation (SSLIC 2022), Environmentally Preferred Alternative Site Plan - DESRI (6/24/2022)

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SOURCE: Bing Maps (2020), Sacramento County (2019), Environmentally Preferred Alternative Site Plan - DESRI (6/24/2022)

**FIGURE 7**

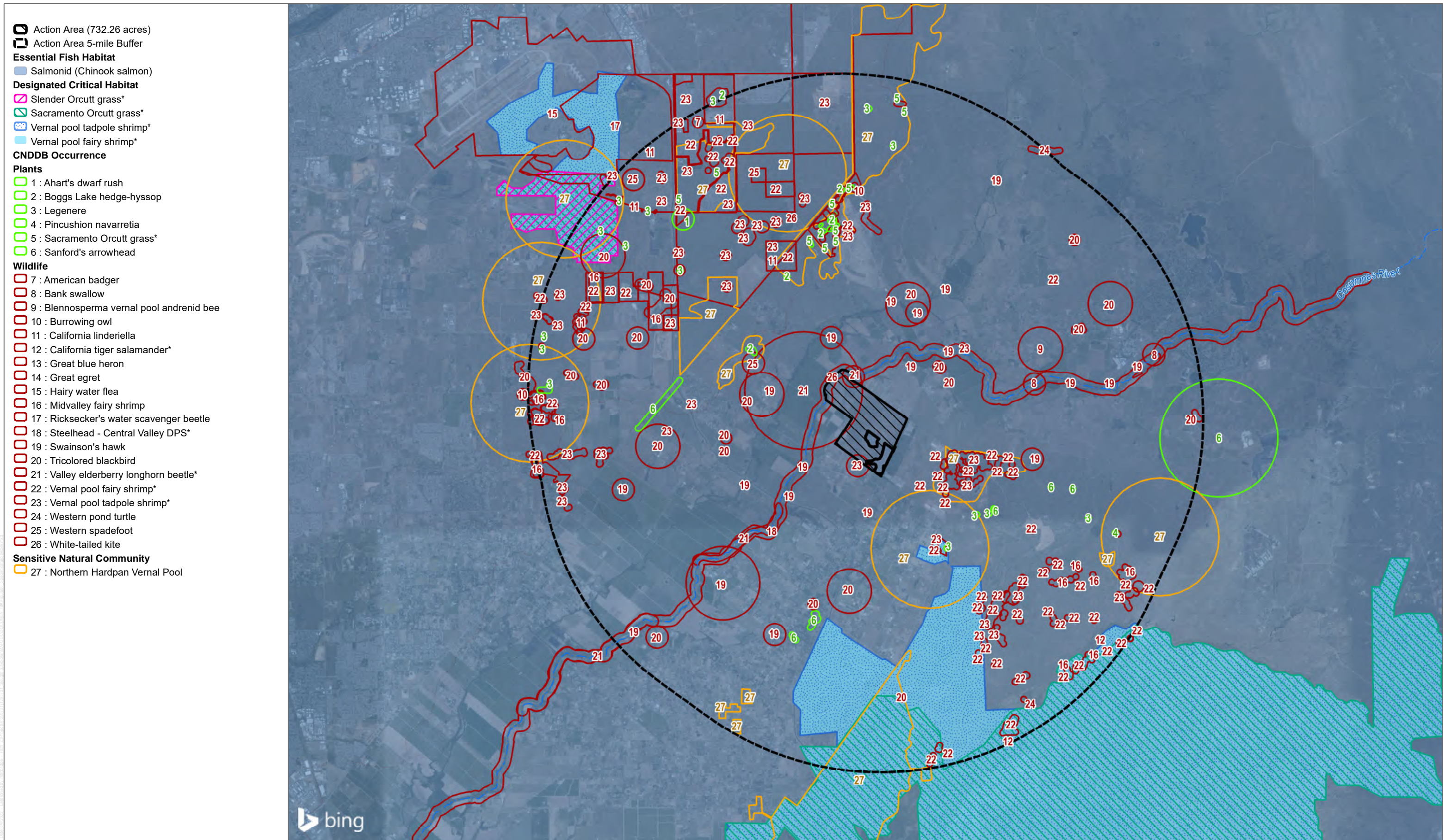
**Vegetation and Land Cover**

Biological Assessment for the Sloughhouse Solar Project



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- Action Area (732.26 acres)
- Action Area 5-mile Buffer
- Essential Fish Habitat**
- Salmonid (Chinook salmon)
- Designated Critical Habitat**
- Slender Orcutt grass\*
- Sacramento Orcutt grass\*
- Vernal pool tadpole shrimp\*
- Vernal pool fairy shrimp\*
- CNDDB Occurrence**
- Plants**
- 1 : Ahart's dwarf rush
- 2 : Boggs Lake hedge-hyssop
- 3 : Legenere
- 4 : Pincushion navarretia
- 5 : Sacramento Orcutt grass\*
- 6 : Sanford's arrowhead
- Wildlife**
- 7 : American badger
- 8 : Bank swallow
- 9 : Blennosperma vernal pool andrenid bee
- 10 : Burrowing owl
- 11 : California linderiella
- 12 : California tiger salamander\*
- 13 : Great blue heron
- 14 : Great egret
- 15 : Hairy water flea
- 16 : Midvalley fairy shrimp
- 17 : Ricksecker's water scavenger beetle
- 18 : Steelhead - Central Valley DPS\*
- 19 : Swainson's hawk
- 20 : Tricolored blackbird
- 21 : Valley elderberry longhorn beetle\*
- 22 : Vernal pool fairy shrimp\*
- 23 : Vernal pool tadpole shrimp\*
- 24 : Western pond turtle
- 25 : Western spadefoot
- 26 : White-tailed kite
- Sensitive Natural Community**
- 27 : Northern Hardpan Vernal Pool

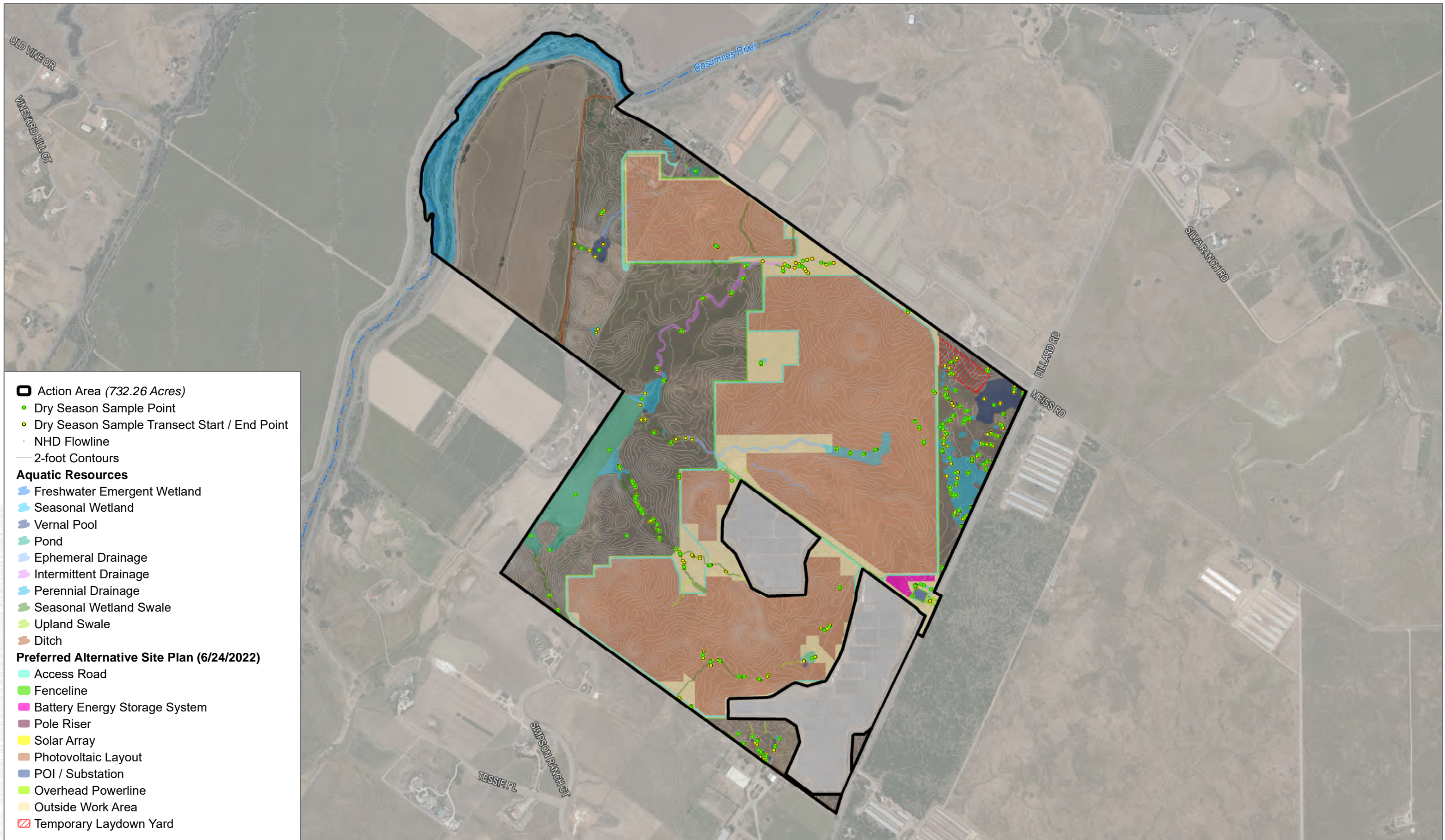
SOURCE: Bing Maps (2020), CDFW (2020), USFWS (2020), NOAA (2021), Environmentally Preferred Alternative Site Plan - DESRI (6/24/2022)  
 \* Indicates federally listed species

**FIGURE 8**  
 Known Special-Status Species Occurrences, Critical Habitat, and Sensitive Communities  
 Biological Assessment for the Sloughhouse Solar Project



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SOURCE: Bing Maps 2020, Sacramento County 2019



FIGURE 9

USFWS Dry Season Protocol Survey Results for Federally Listed Branchiopods

Biological Assessment for the Sloughhouse Solar Project



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SOURCE: Bing Maps 2020, Sacramento County 2019



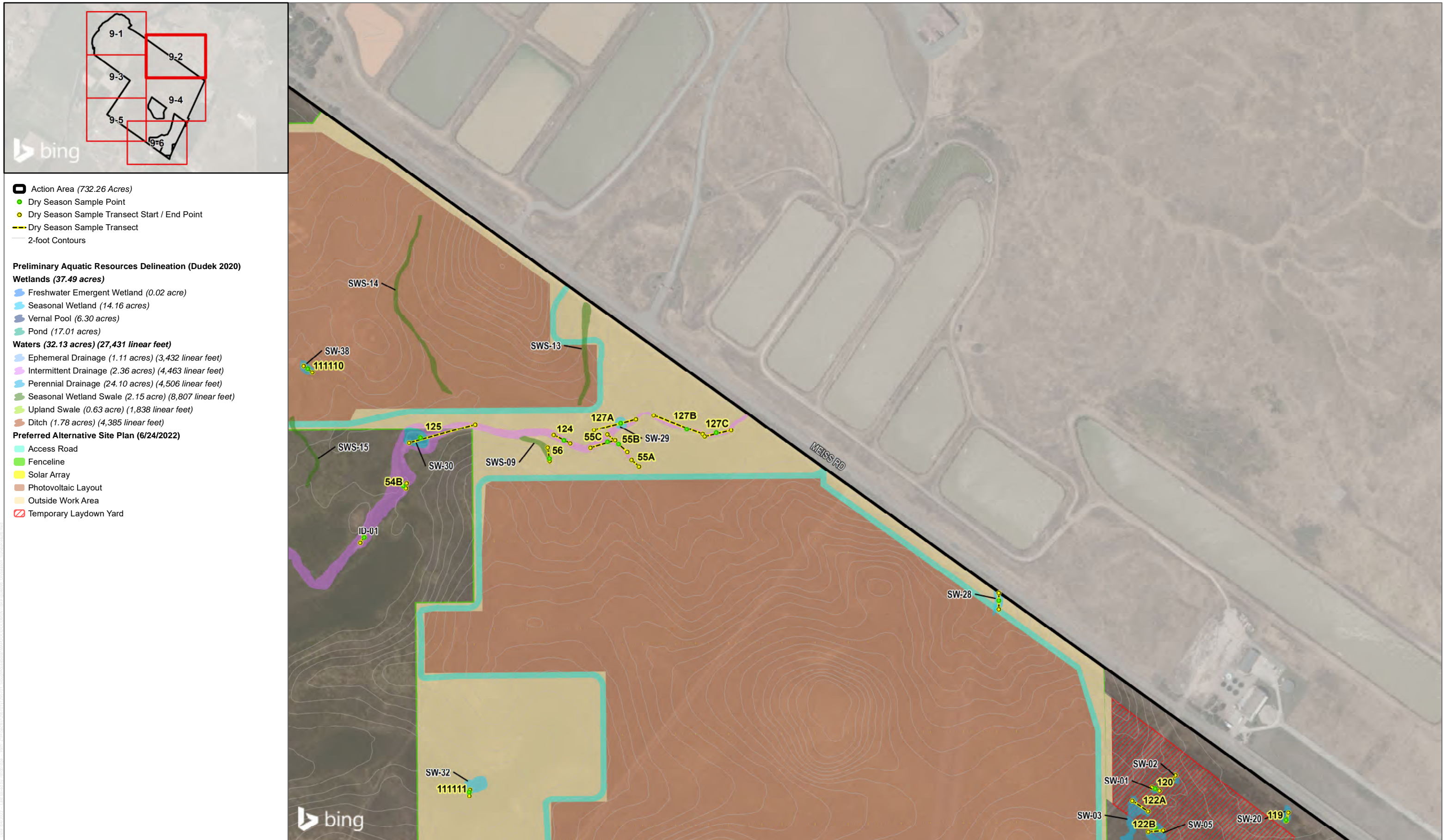
FIGURE 9-1

USFWS Dry Season Protocol Survey Results for Federally Listed Branchiopods

Biological Assessment for the Sloughhouse Solar Project



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SOURCE: Bing Maps 2020, Sacramento County 2019



**FIGURE 9-2**  
 USFWS Dry Season Protocol Survey Results for Federally Listed Branchiopods  
 Biological Assessment for the Sloughhouse Solar Project

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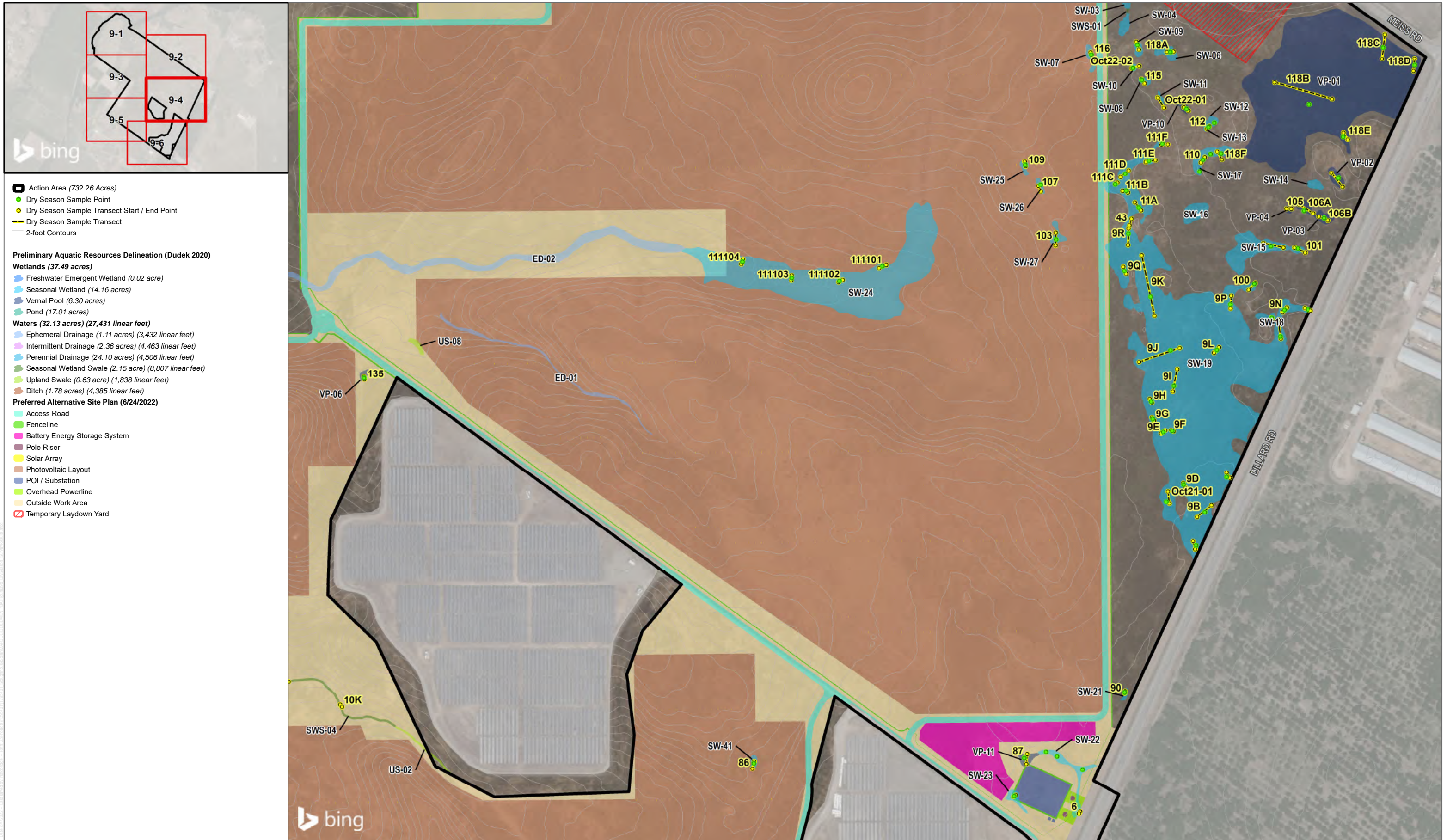
SOURCE: Bing Maps 2020, Sacramento County 2019



**FIGURE 9-3**  
 USFWS Dry Season Protocol Survey Results for Federally Listed Branchiopods  
 Biological Assessment for the Sloughhouse Solar Project

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SOURCE: Bing Maps 2020, Sacramento County 2019



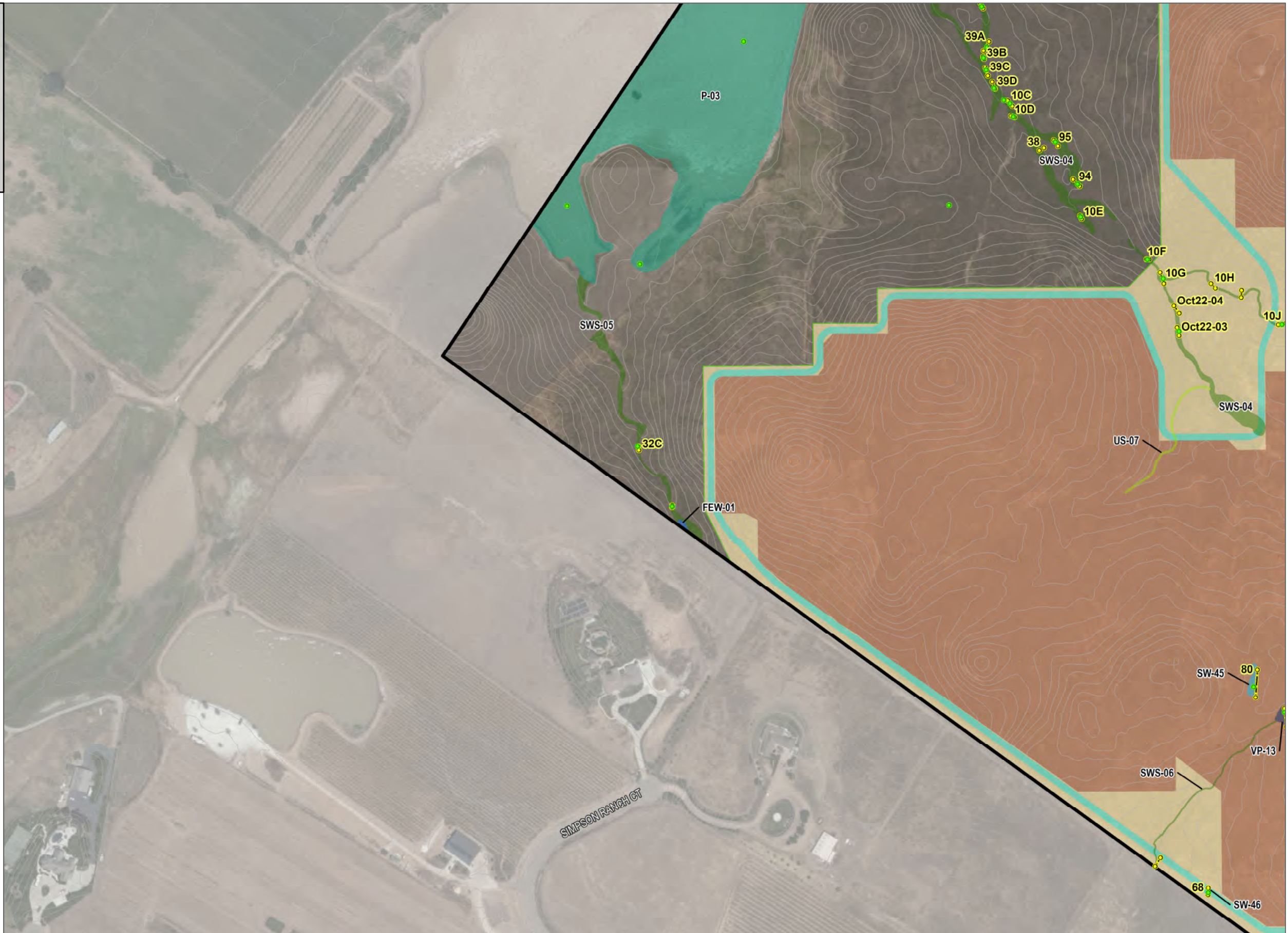
**FIGURE 9-4**  
 USFWS Dry Season Protocol Survey Results for Federally Listed Branchiopods  
 Biological Assessment for the Sloughhouse Solar Project



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- Action Area (732.26 Acres)
  - Dry Season Sample Point
  - Dry Season Sample Transect Start / End Point
  - Dry Season Sample Transect
  - 2-foot Contours
- Preliminary Aquatic Resources Delineation (Dudek 2020)**
- Wetlands (37.49 acres)**
- Freshwater Emergent Wetland (0.02 acre)
  - Seasonal Wetland (14.16 acres)
  - Vernal Pool (6.30 acres)
  - Pond (17.01 acres)
- Waters (32.13 acres) (27,431 linear feet)**
- Ephemeral Drainage (1.11 acres) (3,432 linear feet)
  - Intermittent Drainage (2.36 acres) (4,463 linear feet)
  - Perennial Drainage (24.10 acres) (4,506 linear feet)
  - Seasonal Wetland Swale (2.15 acre) (8,807 linear feet)
  - Upland Swale (0.63 acre) (1,838 linear feet)
  - Ditch (1.78 acres) (4,385 linear feet)
- Preferred Alternative Site Plan (6/24/2022)**
- Access Road
  - Fenceline
  - Solar Array
  - Photovoltaic Layout
  - Outside Work Area



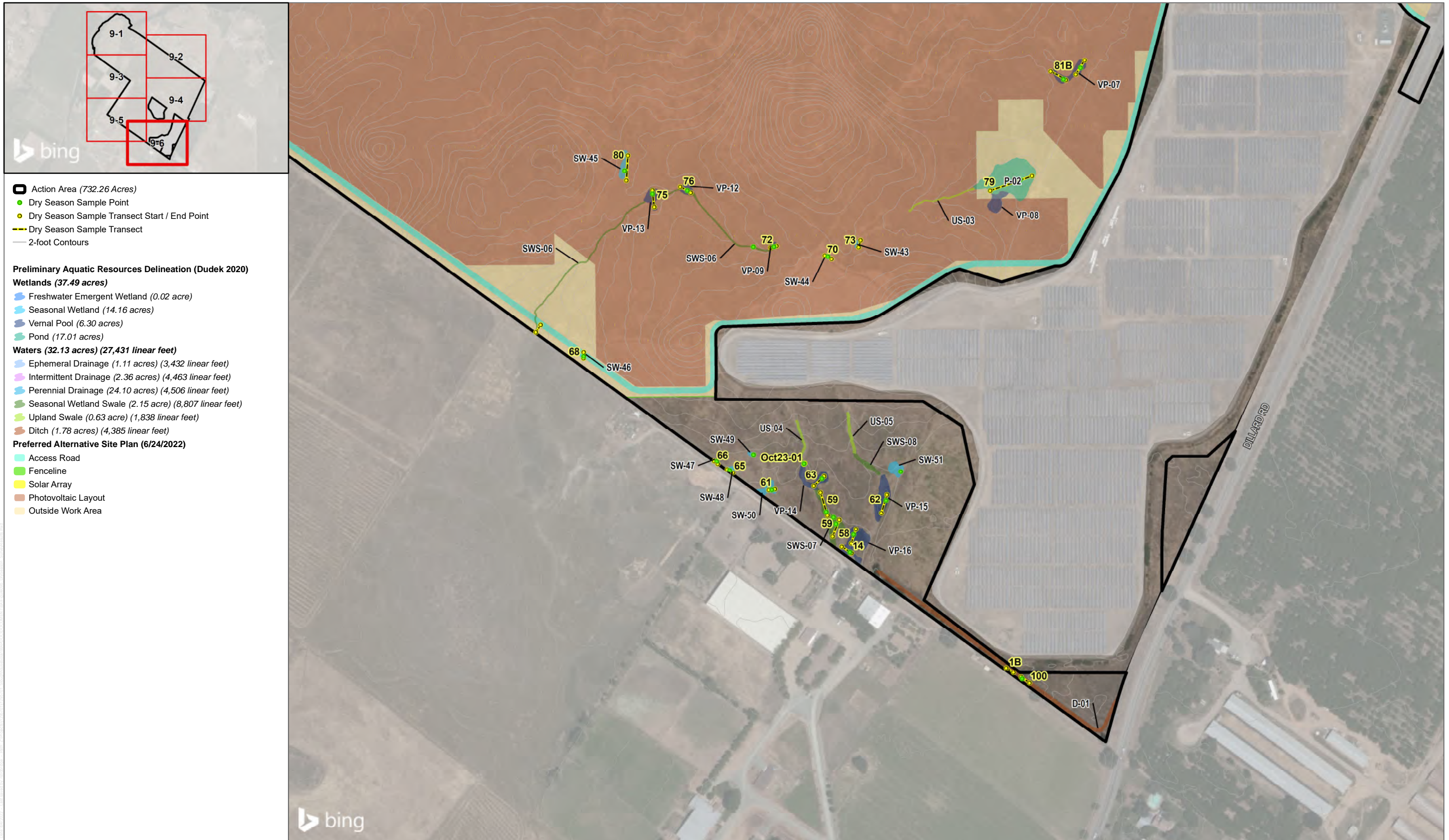
SOURCE: Bing Maps 2020, Sacramento County 2019



**FIGURE 9-5**  
 USFWS Dry Season Protocol Survey Results for Federally Listed Branchiopods  
 Biological Assessment for the Sloughhouse Solar Project

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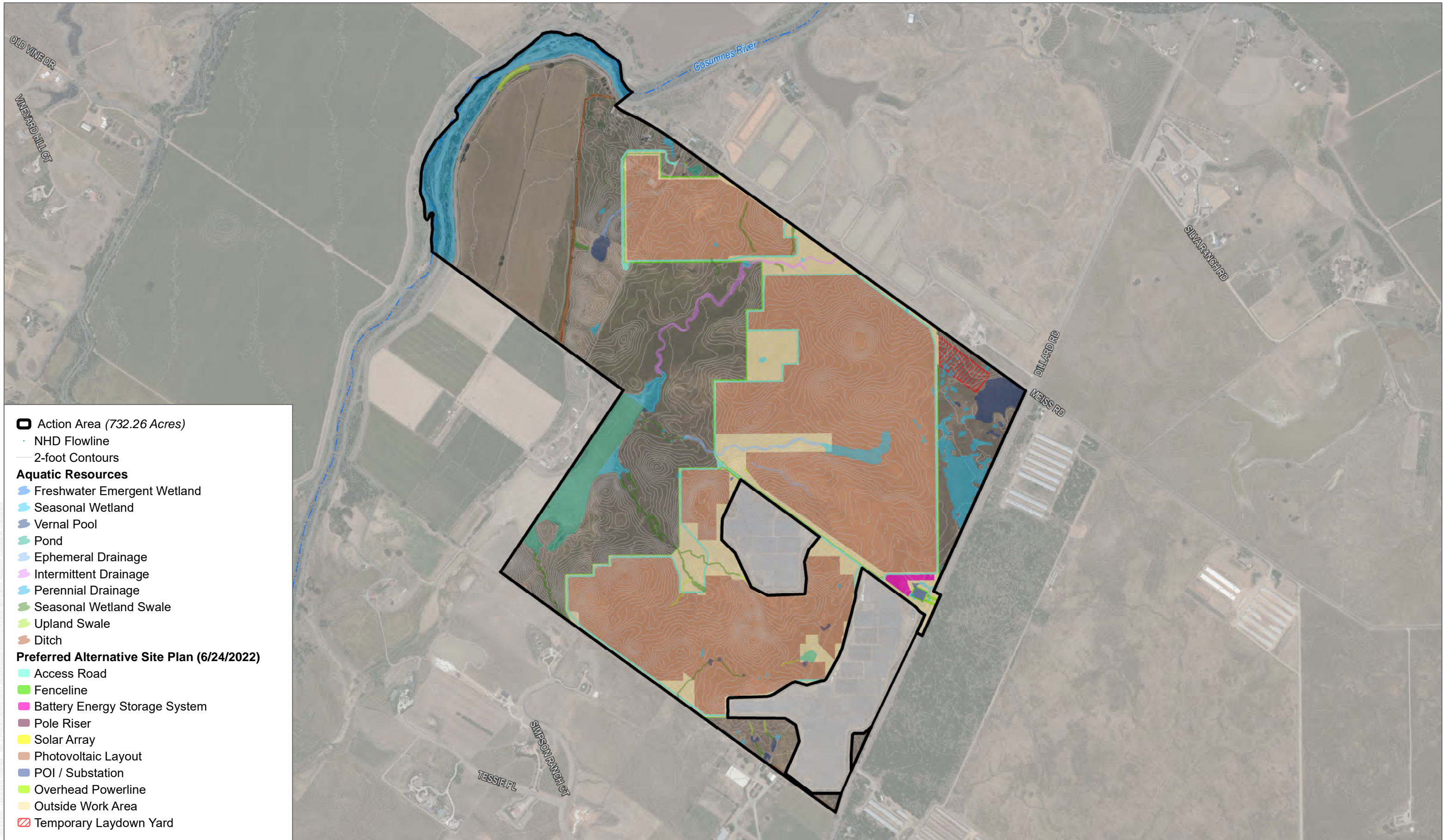




SOURCE: Bing Maps 2020, Sacramento County 2019

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SOURCE: Bing Maps 2020, Sacramento County 2019

**FIGURE 10**



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SOURCE: Bing Maps 2020, Sacramento County 2019



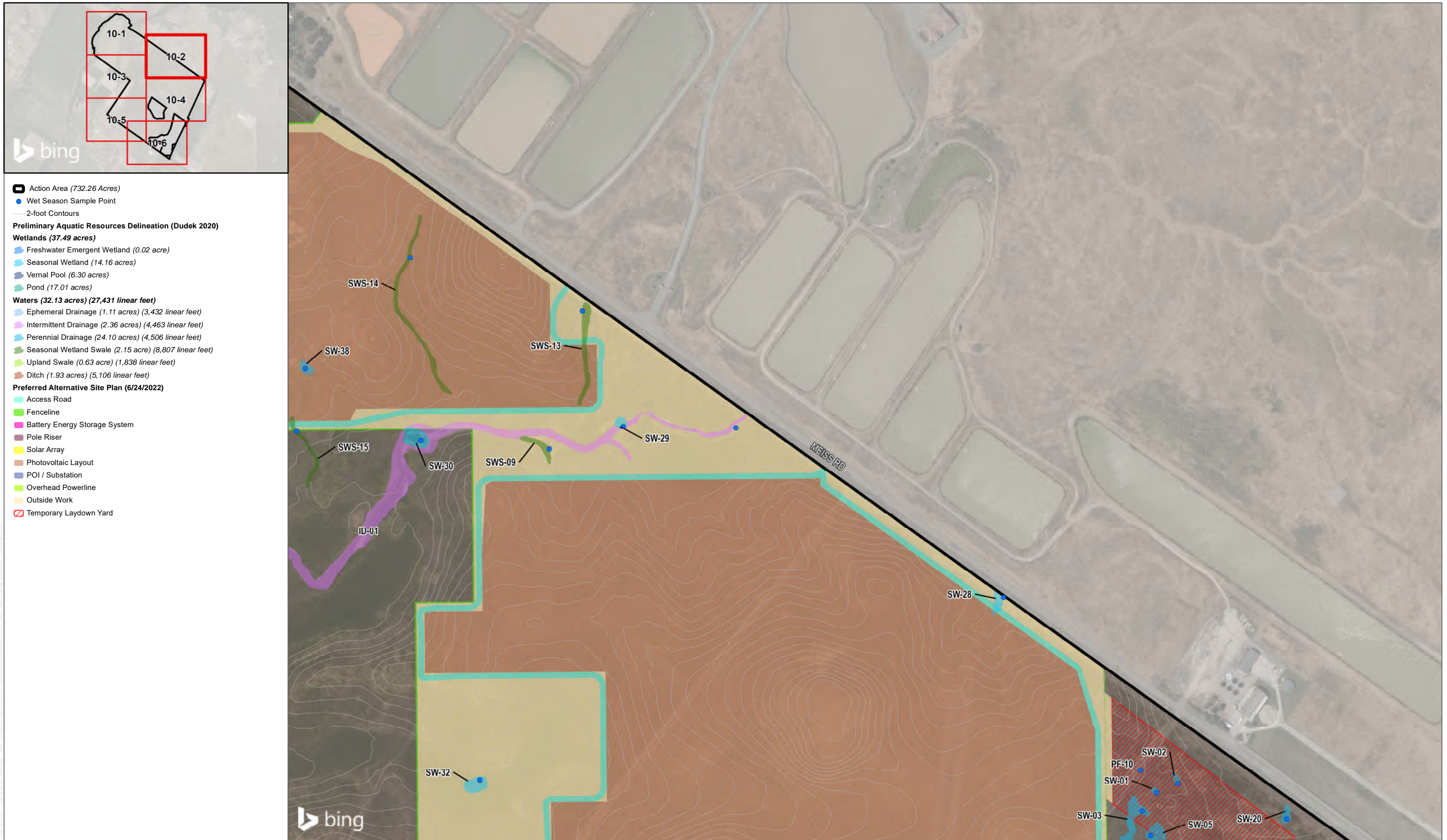
FIGURE 10-1

USFWS Wet Season Protocol Survey Results for Federally Listed Branchiopods

Biological Assessment for the Sloughhouse Solar Project



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SOURCE: Bing Maps 2020, Sacramento County 2019



**FIGURE 10-2**  
 USFWS Wet Season Protocol Survey Results for Federally Listed Branchiopods  
 Biological Assessment for the Sloughhouse Solar Project

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SOURCE: Bing Maps 2020, Sacramento County 2019



FIGURE 10-3

USFWS Wet Season Protocol Survey Results for Federally Listed Branchiopods

Biological Assessment for the Sloughhouse Solar Project

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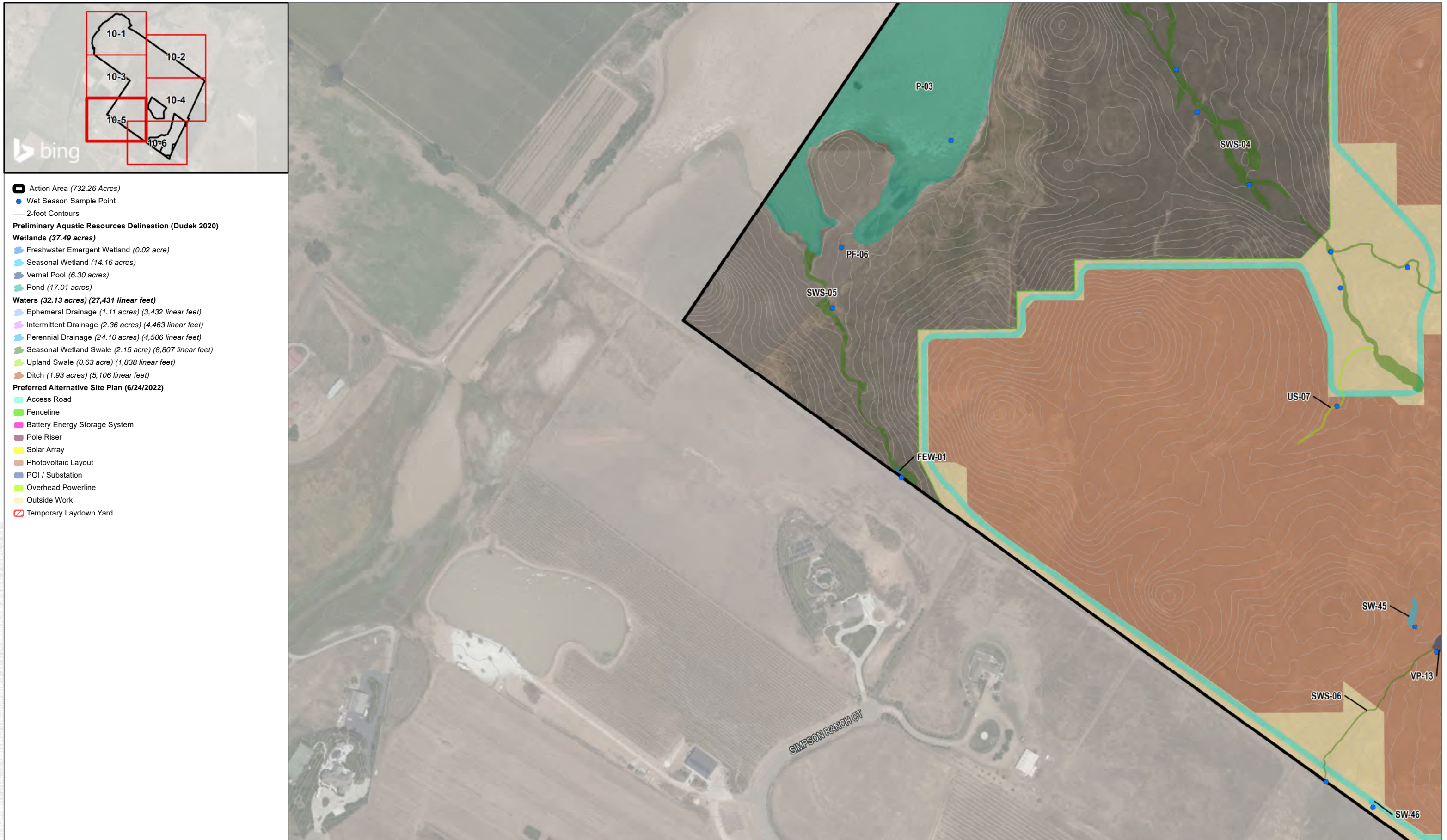






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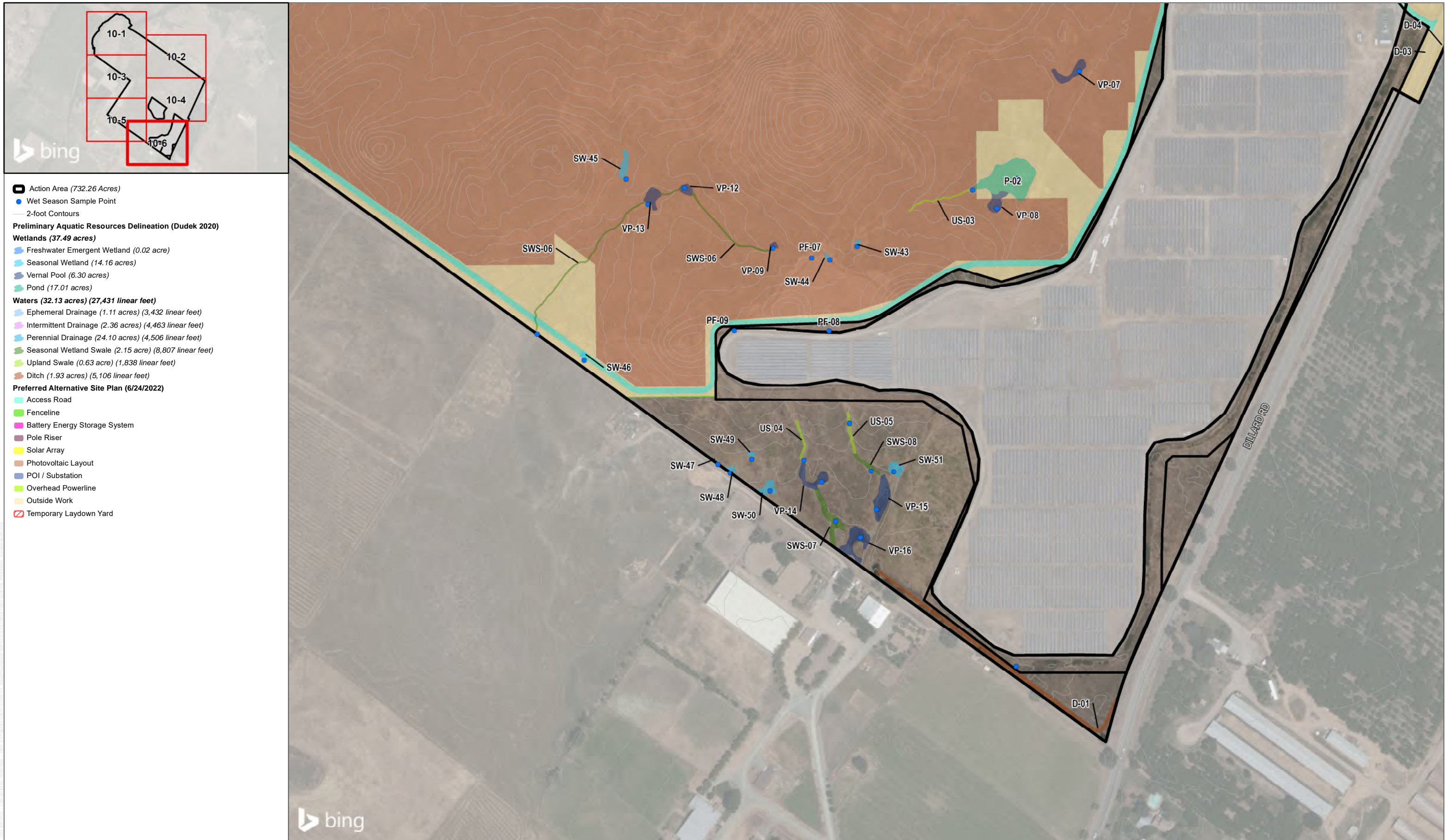
SOURCE: Bing Maps 2020, Sacramento County 2019



**FIGURE 10-5**  
USFWS Wet Season Protocol Survey Results for Federally Listed Branchiopods  
Biological Assessment for the Sloughhouse Solar Project

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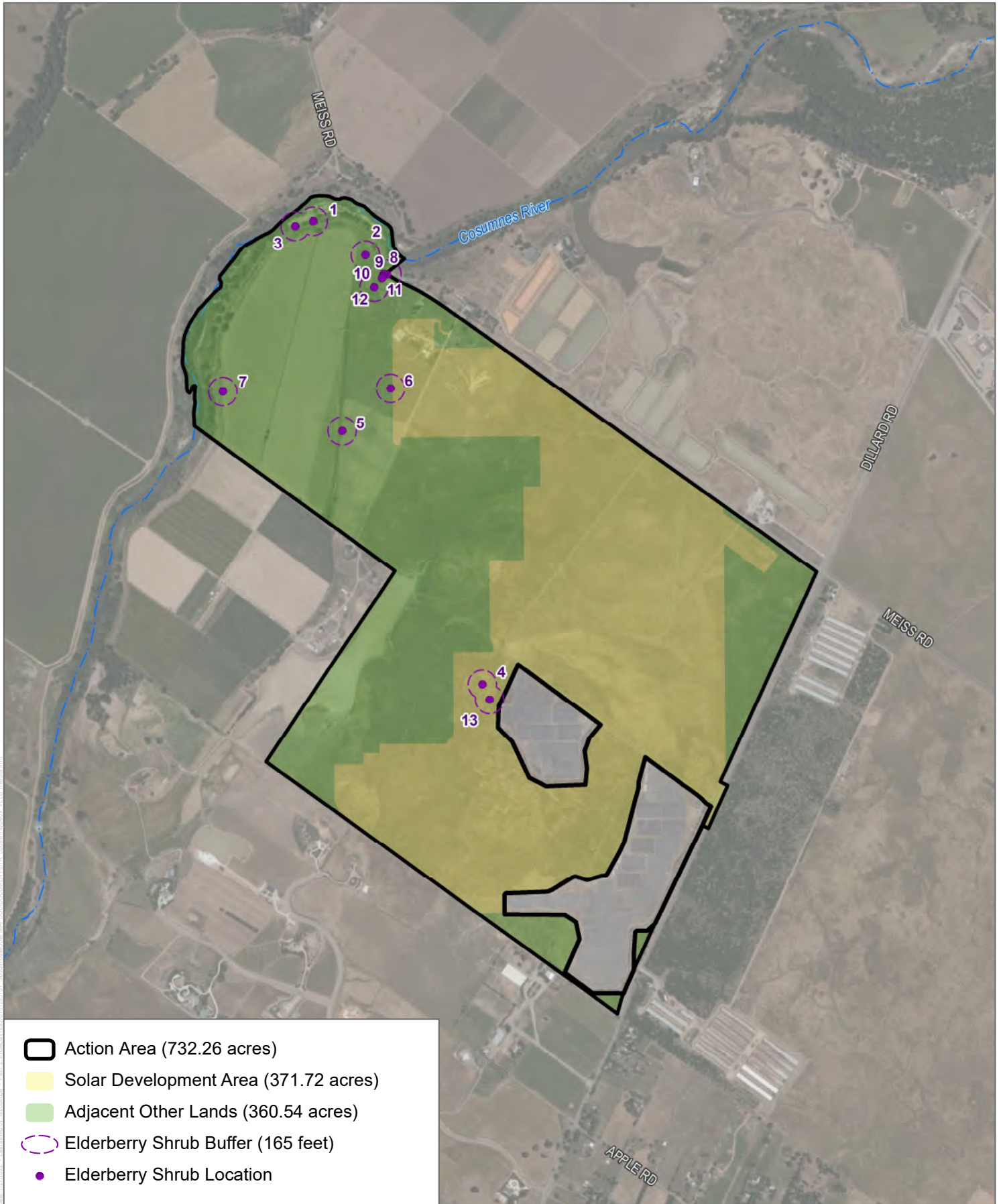
SOURCE: Bing Maps 2020, Sacramento County 2019



**FIGURE 10-6**  
 USFWS Wet Season Protocol Survey Results for Federally Listed Branchiopods  
 Biological Assessment for the Sloughhouse Solar Project

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SOURCE: Bing Maps (2020), Sacramento County (2019), Environmentally Preferred Alternative Site Plan - DESRI (6/24/2022)

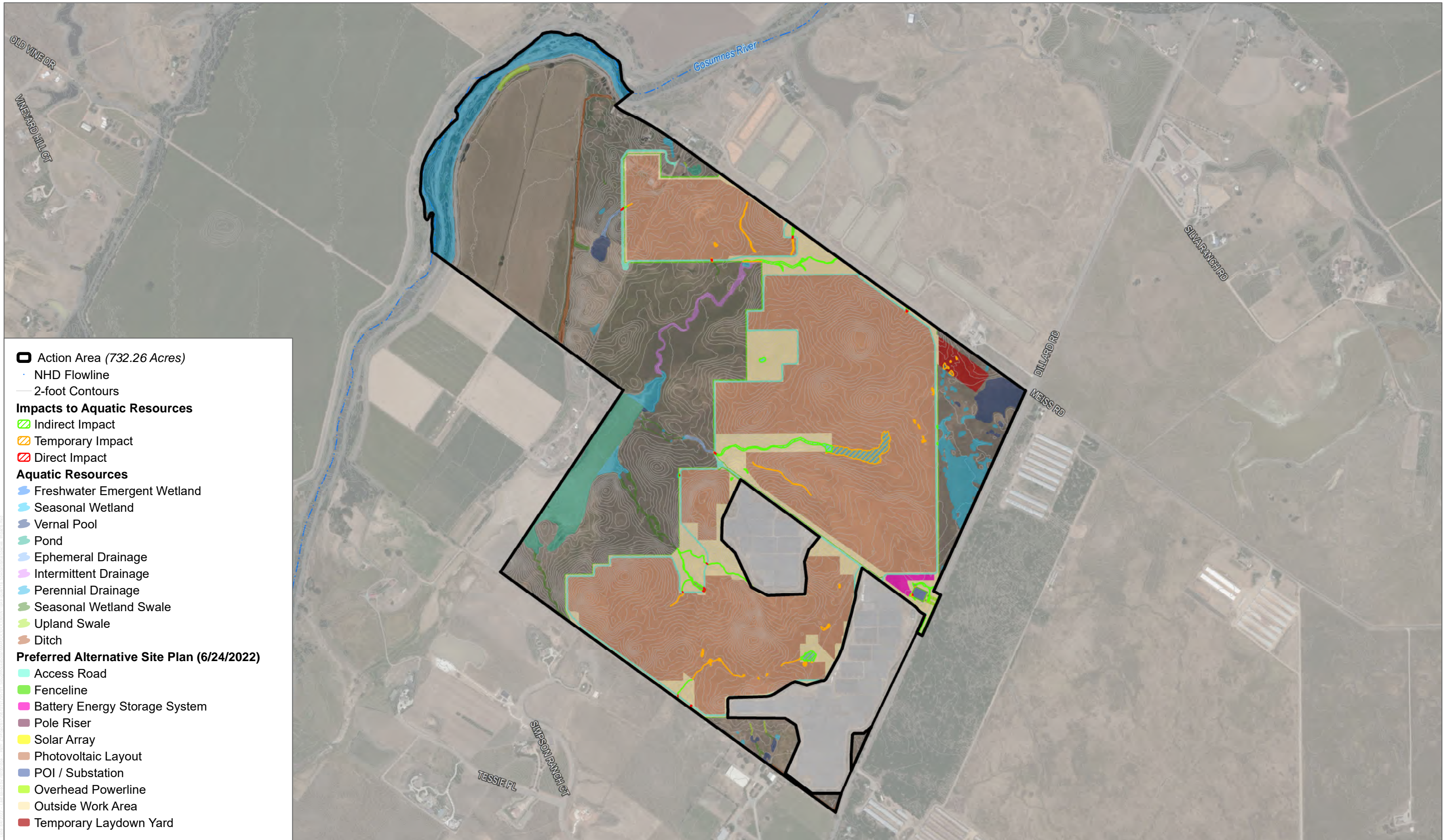
FIGURE 11

Valley Elderberry Longhorn Beetle Results

Biological Assessment for the Sloughhouse Solar Project







SOURCE: Bing Maps 2020, Sacramento County 2019



FIGURE 12

Effects Analysis- Impacts on Aquatic Resource Habitats

Biological Assessment for the Sloughhouse Solar Project



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SOURCE: Bing Maps 2020, Sacramento County 2019

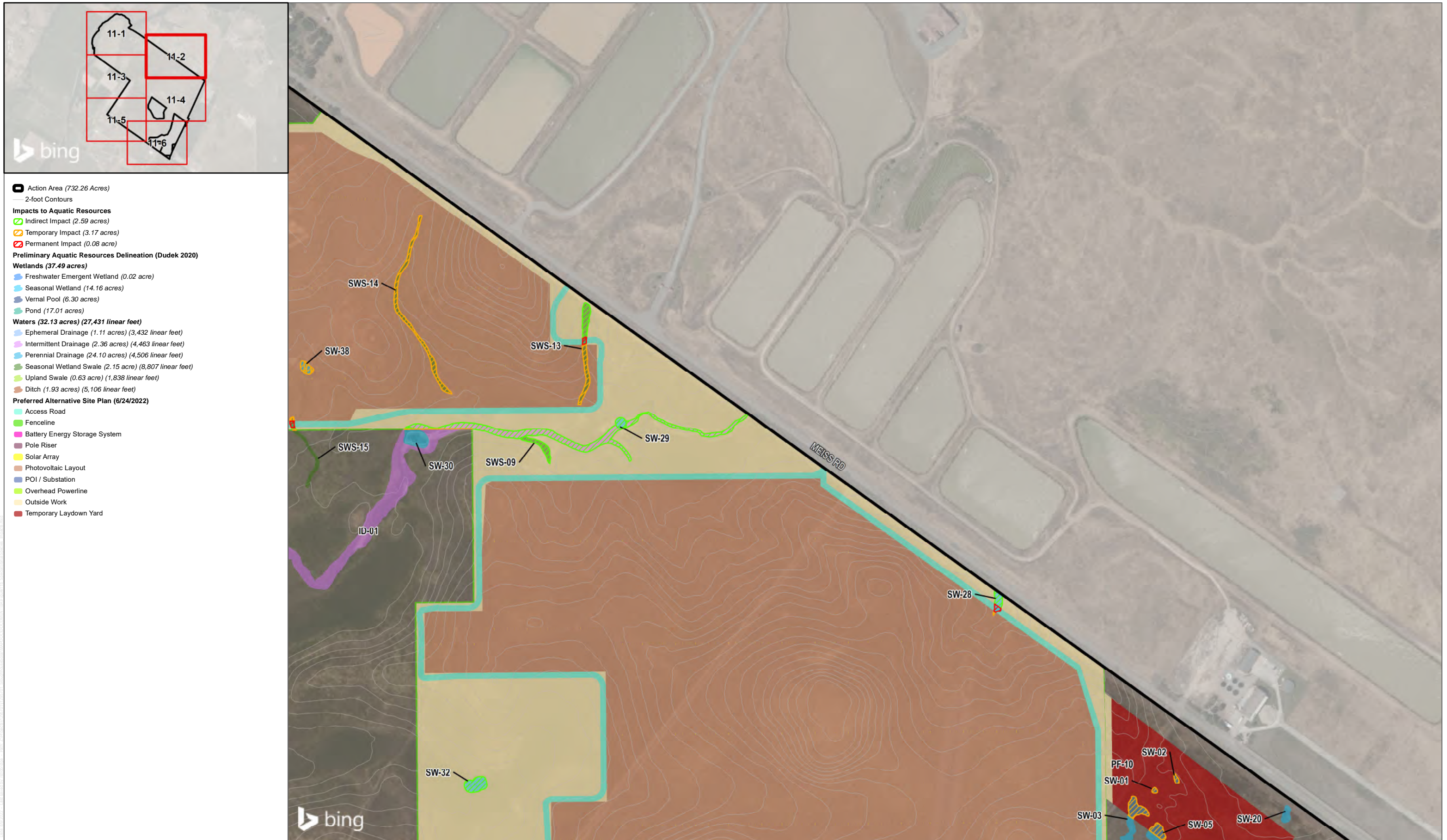
**FIGURE 12-1**

Effects Analysis- Impacts on Aquatic Resource Habitats

Biological Assessment for the Sloughhouse Solar Project



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SOURCE: Bing Maps 2020, Sacramento County 2019

**FIGURE 12-2**

Effects Analysis- Impacts on Aquatic Resource Habitats

Biological Assessment for the Sloughhouse Solar Project



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SOURCE: Bing Maps 2020, Sacramento County 2019



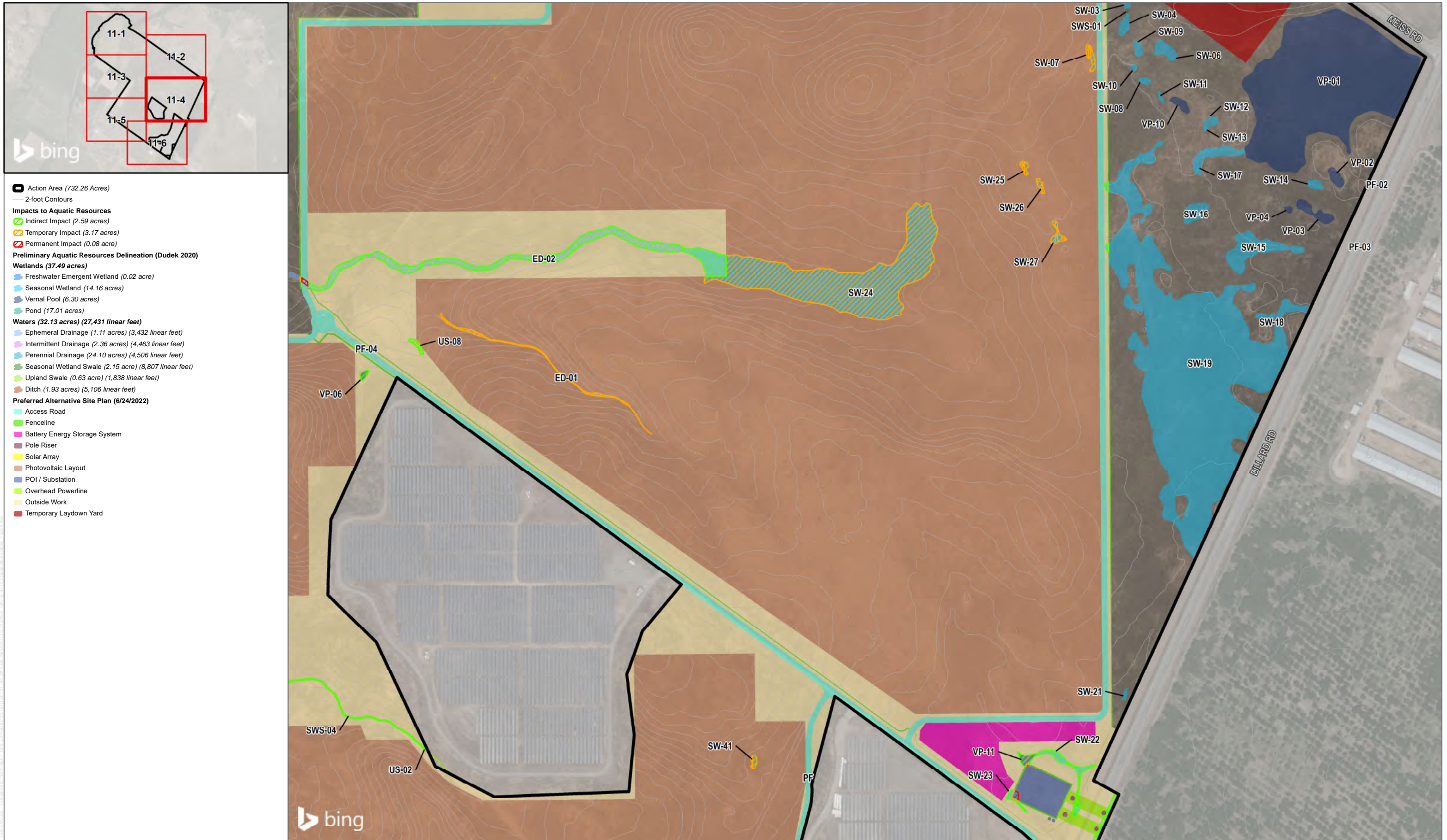
FIGURE 12-3

Effects Analysis- Impacts on Aquatic Resource Habitats

Biological Assessment for the Sloughouse Solar Project

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SOURCE: Bing Maps 2020, Sacramento County 2019



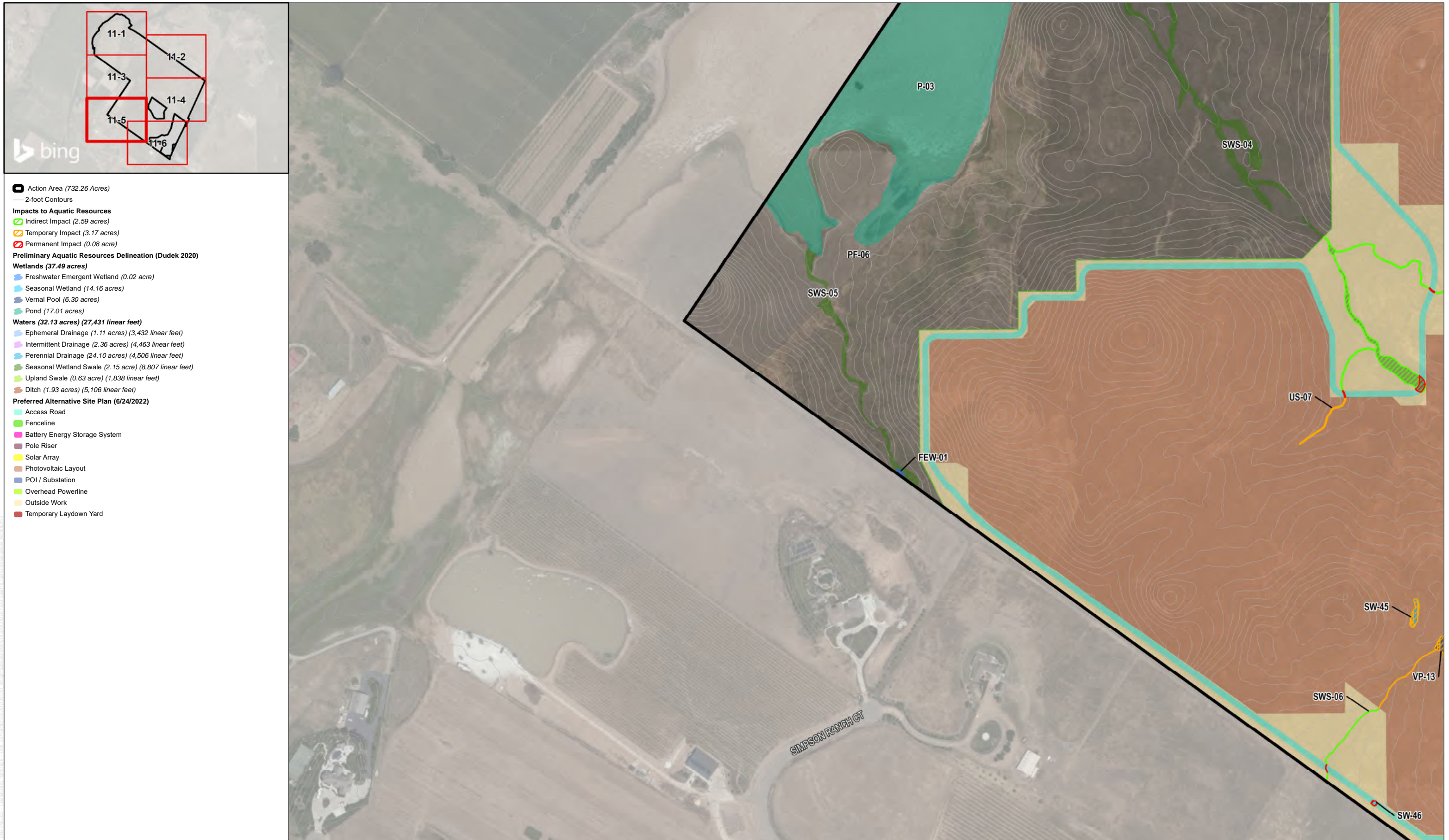
FIGURE 12-4

Effects Analysis- Impacts on Aquatic Resource Habitats

Biological Assessment for the Sloughhouse Solar Project



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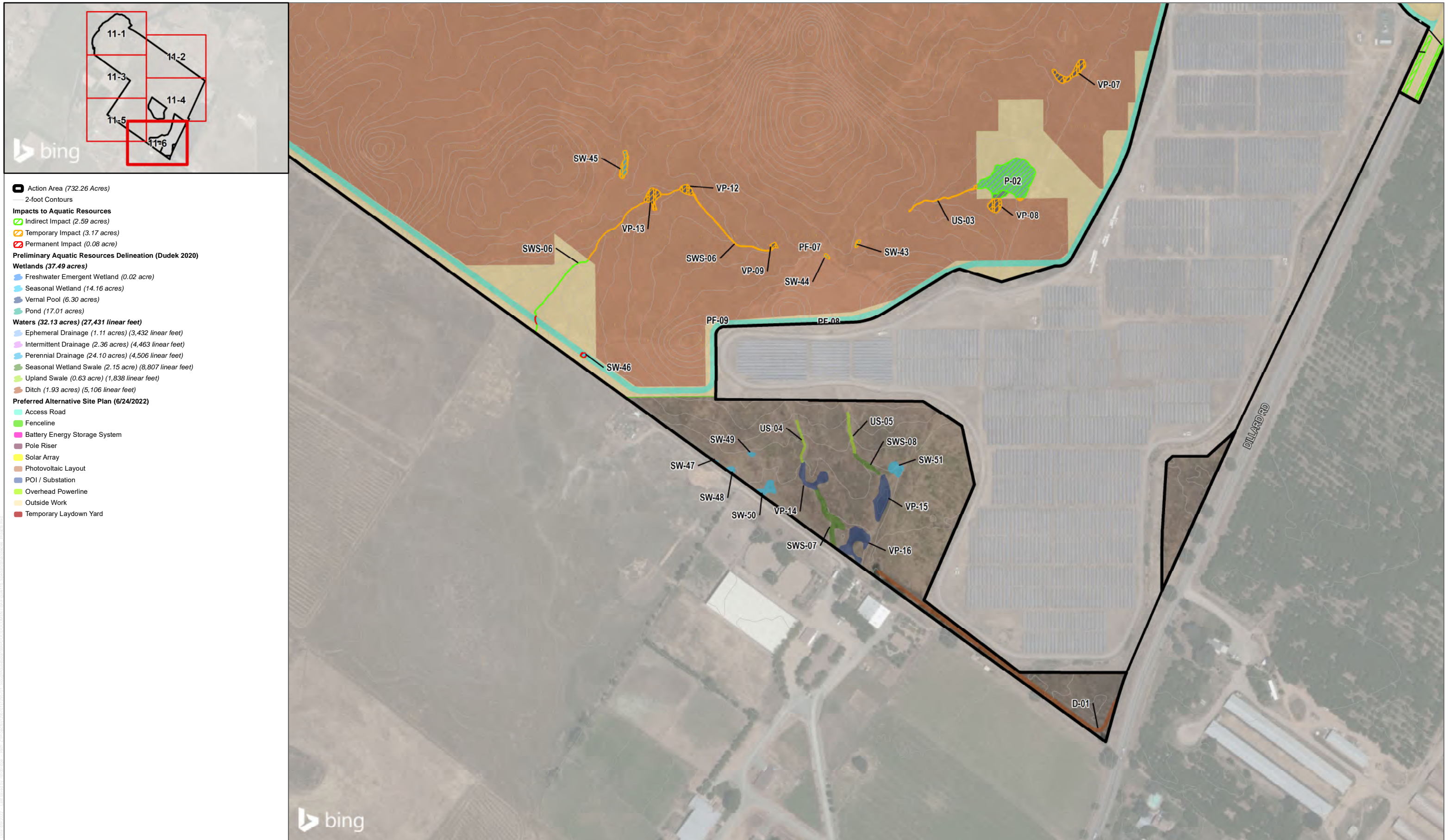


SOURCE: Bing Maps 2020, Sacramento County 2019

**FIGURE 12-5**



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SOURCE: Bing Maps 2020, Sacramento County 2019

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# **Appendix A**

## Site and Grading Plan Exhibits

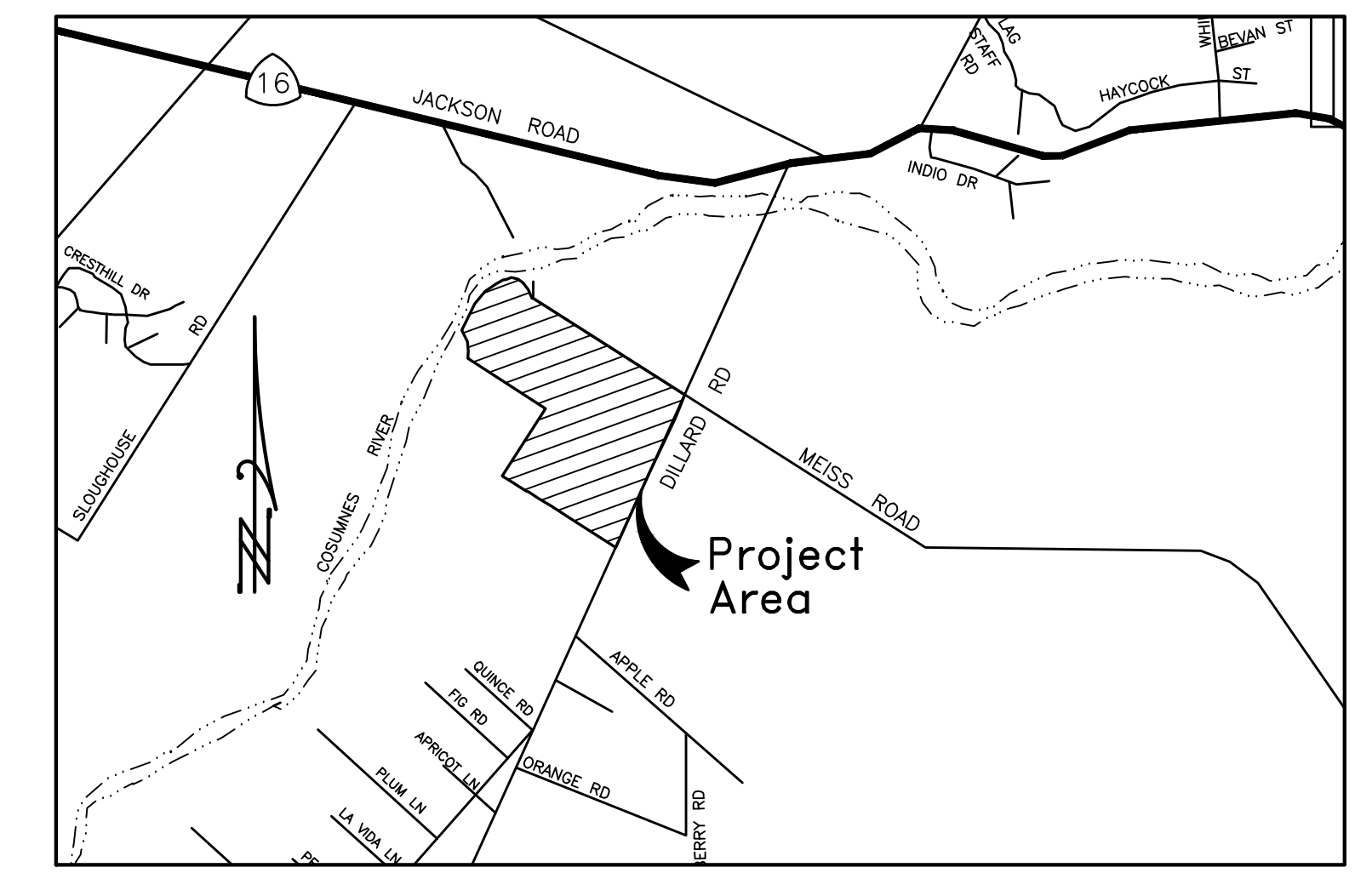


EARTHWORK VOLUMES	
Raw Excavation	500,000 cy +/-
Raw Embankment	435,000 cy +/-
Shrinkage/consolidation	65,000 cy +/-
Import / Export	0 cy

BENCH MARK 01D-38 ELEVATION 131.32 NAVD 88 DATUM  
 2" BRASS DISC STAMPED "SACRAMENTO CO. DEPT. OF PUBLIC WORKS CO. B.M. 10-38" LOCATED IN WEST EDGE OF EAST CONCRETE WALK OVER NORTH ABUTMENT OF CONCRETE BRIDGE ON DILLARD RD. ACROSS THE COSUMES RIVER APPROX. 0.10 MILE SOUTH OF JACKSON HWY (STATE ROUTE 16) LEVELS RUN FROM U.S.C. & G.S. B.M. T-859. (FEBRUARY 1964)

NOTE:  
 CONTOUR INTERVAL  
 EXISTING = 1'  
 PROPOSED = 5'

- GRADING NOTES:**
- REMOVE STRUCTURES
  - 3:1 SLOPE BANK
  - GRADE DITCH/SWALE TO DRAIN
  - EX WELL TO REMAIN
  - GRADE A TEMPORARY 40' WIDE HAUL ROAD, RESTORE AREA AFTER GRADING IS COMPLETE
  - ACCESS GATE SET BACK 30' FROM EDGE OF PAVING



VICINITY MAP  
 NOT TO SCALE

# ALTERNATIVE SITE PLAN CONCEPTUAL GRADING PLAN for SLOUGHHOUSE SOLAR FARM

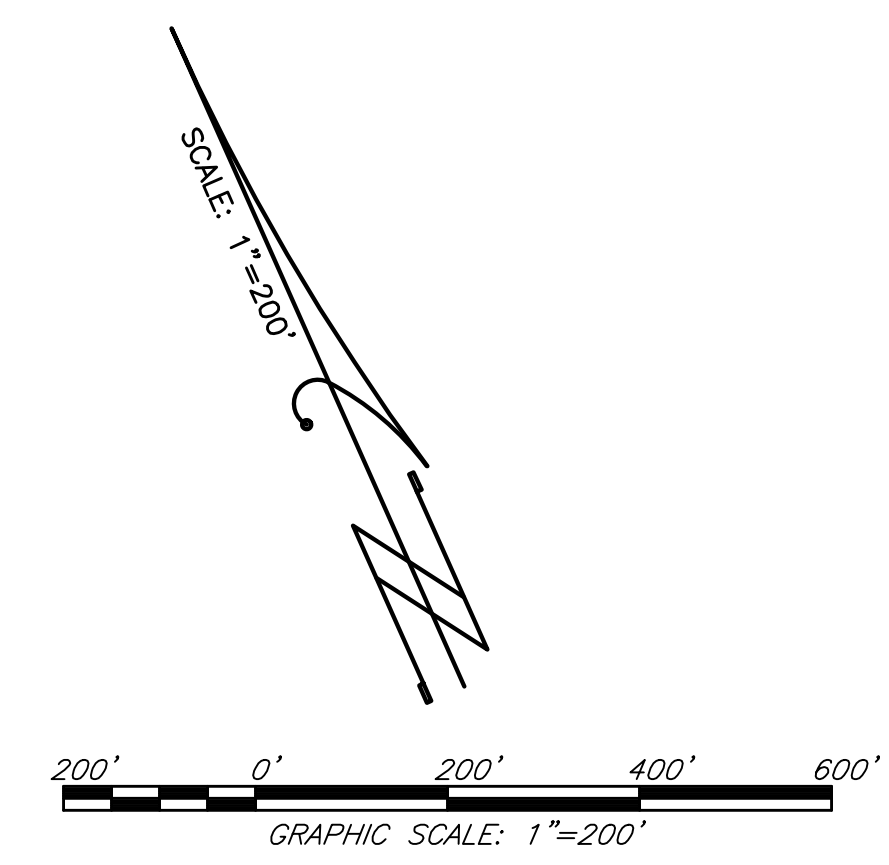
7794 DILLARD ROAD  
 A.P.N. 126-0110-001 & 003  
 SACRAMENTO COUNTY, CALIFORNIA  
 SEPTEMBER 13, 2022

SHEET 1 of 3



- LEGEND:**
- PROPOSED DRAINAGE FLOW DIRECTION
  - EXISTING DRAINAGE FLOW DIRECTION (FENCED)
  - PROPOSED DRAINAGE SWALE
  - GL GRADING LIMIT
  - NG NO GRADING
  - 120 PROPOSED 10' EVEN CONTOUR
  - 118 PROPOSED 10' ODD CONTOUR
  - XX PROPOSED SPOT ELEVATION
  - EX CONTOUR
  - EX SWALE
  - FEMA 100 YR FLOOD ZONE
  - FEMA 100 YR WATER SURFACE
  - PROPOSED FEMA 100 YR FLOOD PLAN
  - PROPOSED SOLAR ARRAY
  - EX FENCE
  - EX OVERHEAD LINE
  - EX ELECTRIC LINE
  - 114' FEMA 100 YR WATER SURFACE ELEVATION

- LEGEND**
- DITCH
  - EPHEMERAL DRAINAGE
  - FRESHWATER EMERGENT WETLAND
  - INTERMITTENT DRAINAGE
  - PERENNIAL DRAINAGE
  - POND
  - SEASONAL WETLAND
  - SEASONAL WETLAND SWALE
  - UPLAND SWALE
  - VERNAL POOL



**BW** BAKER WILLIAMS ENGINEERING GROUP  
 8020 RUTLAND DRIVE, SUITE 19  
 CARMICHAEL, CA 95608-0515  
 Phone (916)331-4336 Fax (916)331-4430  
 EMAIL: office@bwengineers.com

126-0110-011  
 PARCEL 1  
 145 PM 11

APN 126-0430-006

APN 126-0110-013

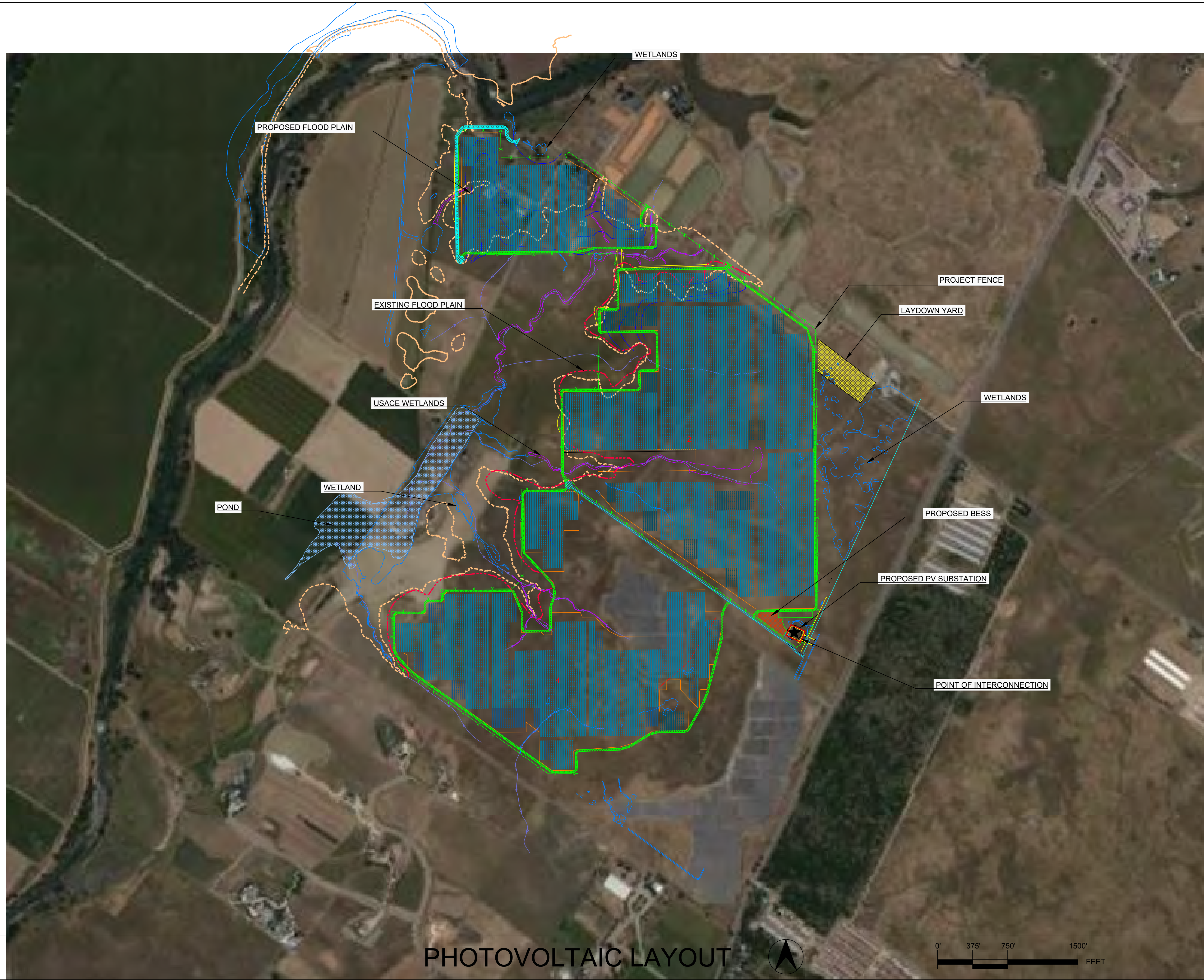
126-0110-008

EX. SOLAR  
 ESMT. PER  
 20110825-1000

NOT A PART  
 OF THIS  
 PROJECT  
 EX. SOLAR  
 ESMT. PER  
 20110825-1000

NOT A PART  
 OF THIS  
 PROJECT





### SYSTEM SUMMARY

PROJECT LOCATION	SACRAMENTO COUNTY, CA
MODULE TYPE	LONGI
MODULE POWER	545 W
INVERTER	SG3600
TRACKER TYPE	NEXTRACKER HORIZON 1P
ROW TO ROW	22.43 FT
GCR	33.00%
RANGE OF MOTION	+/- 60
ARRAY AZIMUTH	180 dEG
DC CAPACITY	64.62 MW
AC CAPACITY	50 MW AT POI
DC TO AC RATIO	1.29
78 MODULE TABLE	1376
52 MODULE TABLE	216

### LEGEND

	PV SUBSTATION
	USACE WETLANDS
	WETLANDS
	POINT OF INTERCONNECTION
	PV AREA
	PROPOSED ACCESS ROAD
	LAYDOWN YARD
	PROPOSED FLOOD ZONE
	EXISTING FEMA 100YR OLD FLOOD ZONE
	PROPOSED AB FIRE ACCESS
	EX AB FIRE ACCESS
	PROPOSED BESS
	PROPOSED FENCE

NOTES:  
1. PRELIMINARY DRAWING FOR REFERENCE ONLY.

CONSULTANT



PROJECT NAME: SLOUGHHOUSE SOLAR, CA

DATE	6/24/2022	SHEET NO.	L001
DWG. NO		SCALE	NTS
REV. NO			
DRAWN BY	AW		

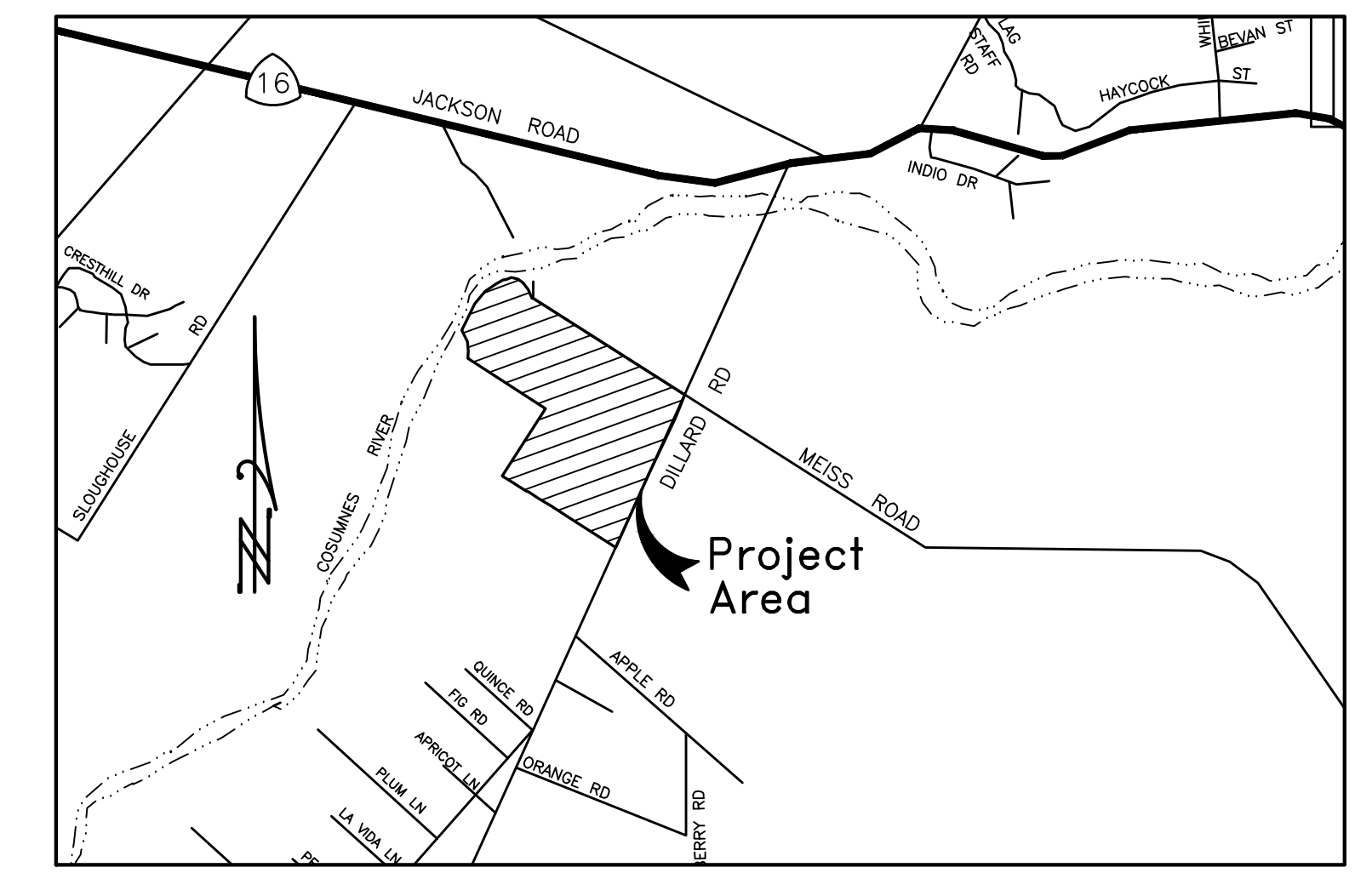


EARTHWORK VOLUMES	
Raw Excavation	500,000 cy +/-
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Shrinkage/consolidation	65,000 cy +/-
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 2" BRASS DISC STAMPED "SACRAMENTO CO. DEPT. OF PUBLIC WORKS CO. B.M. 10-38" LOCATED IN WEST EDGE OF EAST CONCRETE WALK OVER NORTH ABUTMENT OF CONCRETE BRIDGE ON DILLARD RD. ACROSS THE COSUMES RIVER APPROX. 0.10 MILE SOUTH OF JACKSON HWY (STATE ROUTE 16) LEVELS RUN FROM U.S.C. & G.S. B.M. T-859. (FEBRUARY 1964)

NOTE:  
 CONTOUR INTERVAL  
 EXISTING = 1'  
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- GRADING NOTES:**
- REMOVE STRUCTURES
  - 3:1 SLOPE BANK
  - GRADE DITCH/SWALE TO DRAIN
  - EX WELL TO REMAIN
  - GRADE A TEMPORARY 40' WIDE HAUL ROAD, RESTORE AREA AFTER GRADING IS COMPLETE
  - ACCESS GATE SET BACK 30' FROM EDGE OF PAVING



VICINITY MAP  
 NOT TO SCALE

# ALTERNATIVE SITE PLAN CONCEPTUAL GRADING PLAN for SLOUGHHOUSE SOLAR FARM

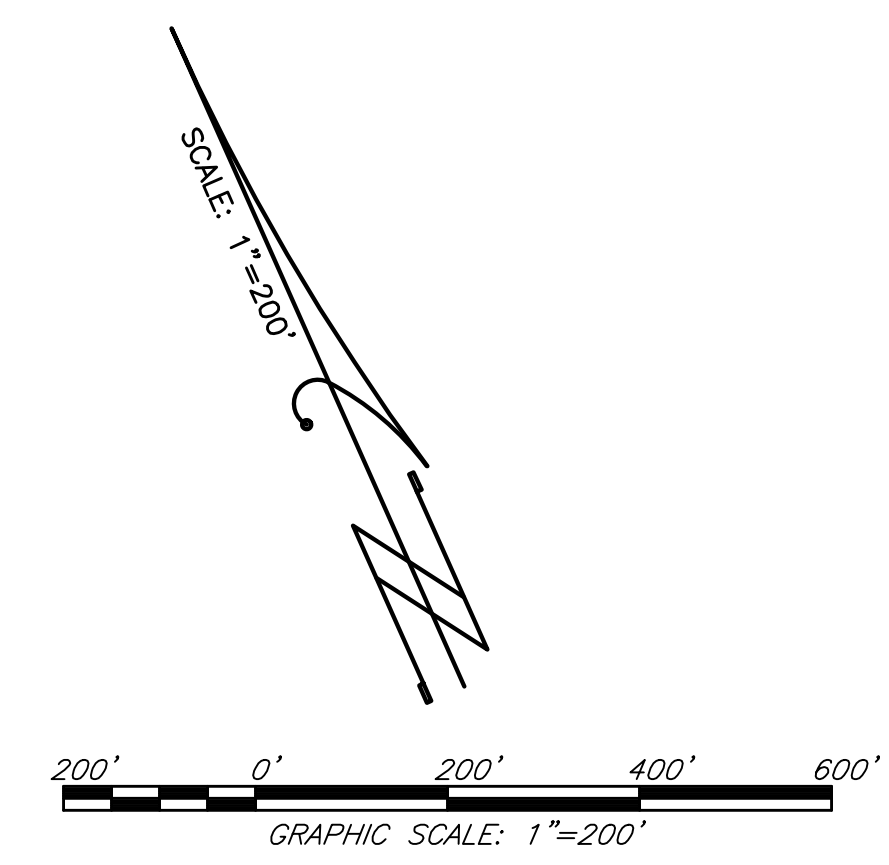
7794 DILLARD ROAD  
 A.P.N. 126-0110-001 & 003  
 SACRAMENTO COUNTY, CALIFORNIA  
 SEPTEMBER 13, 2022

SHEET 1 of 3



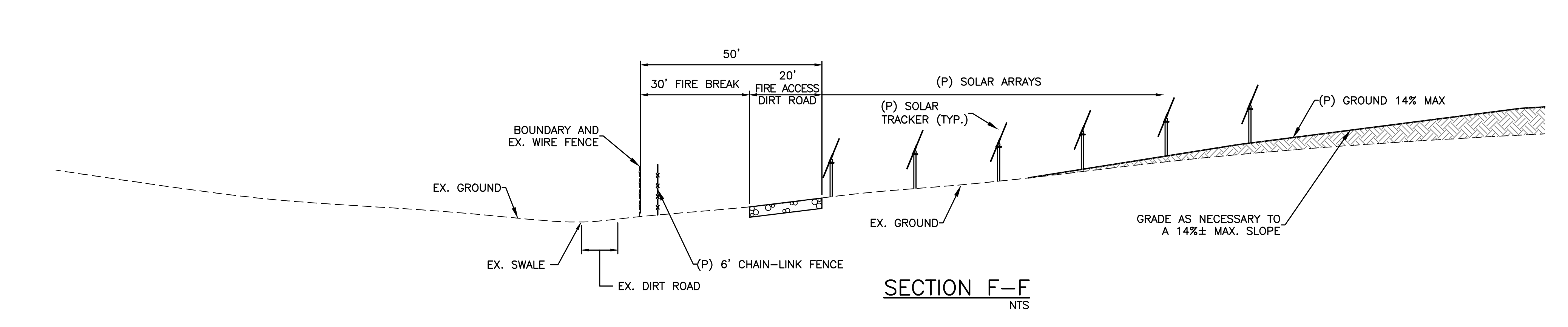
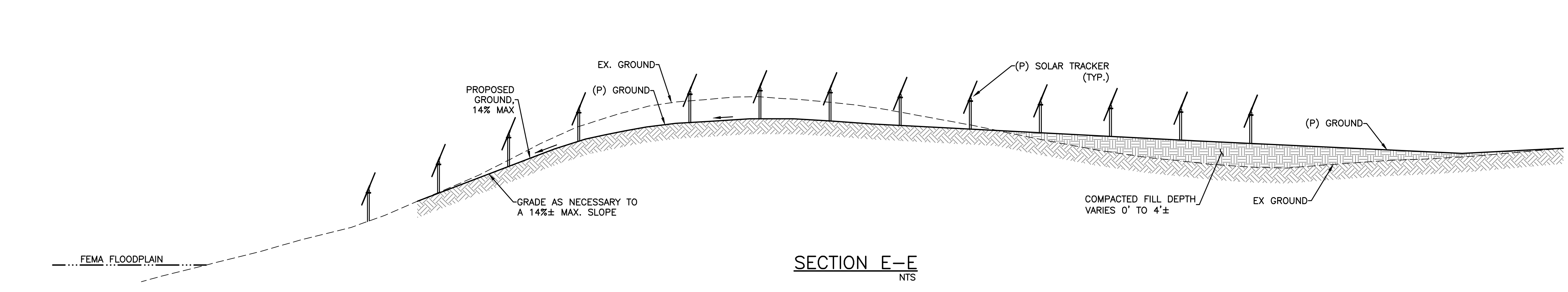
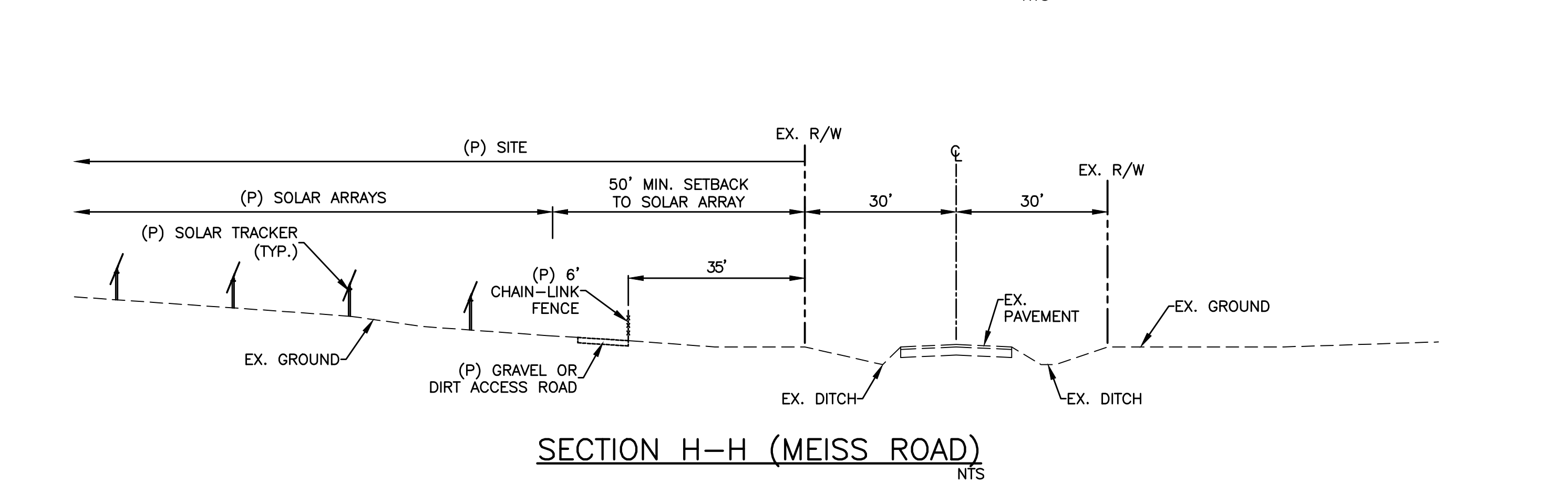
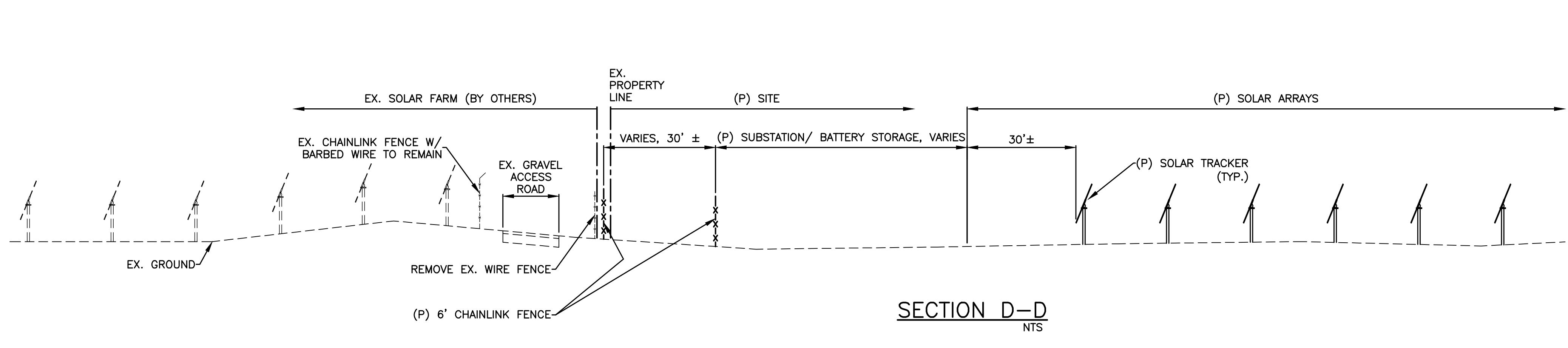
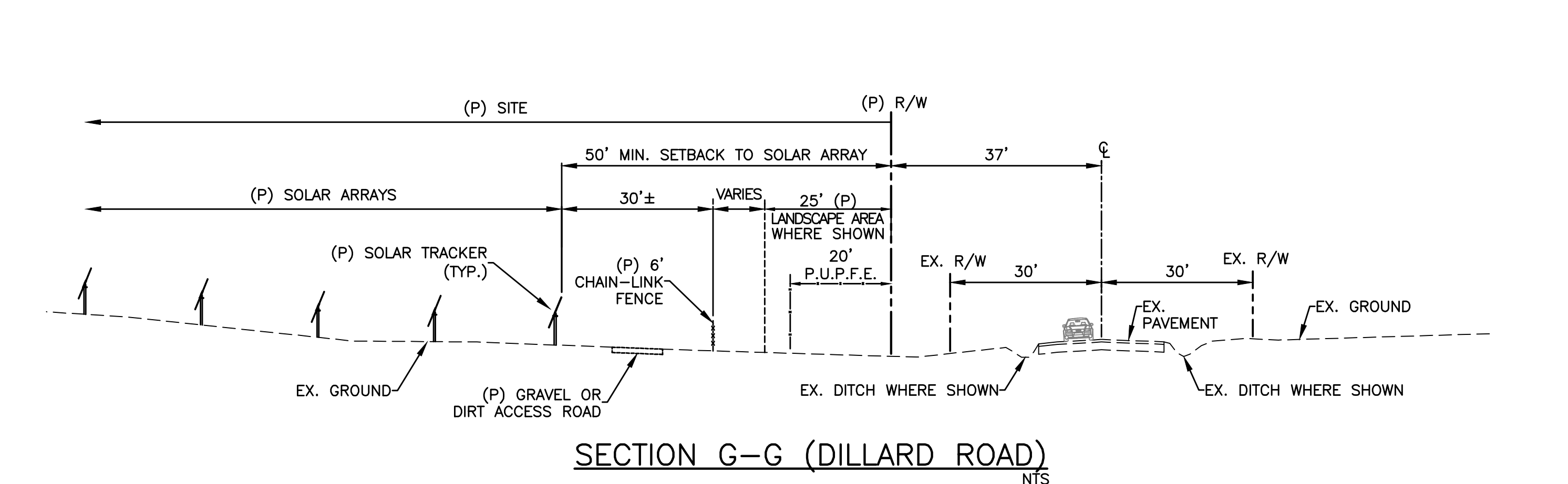
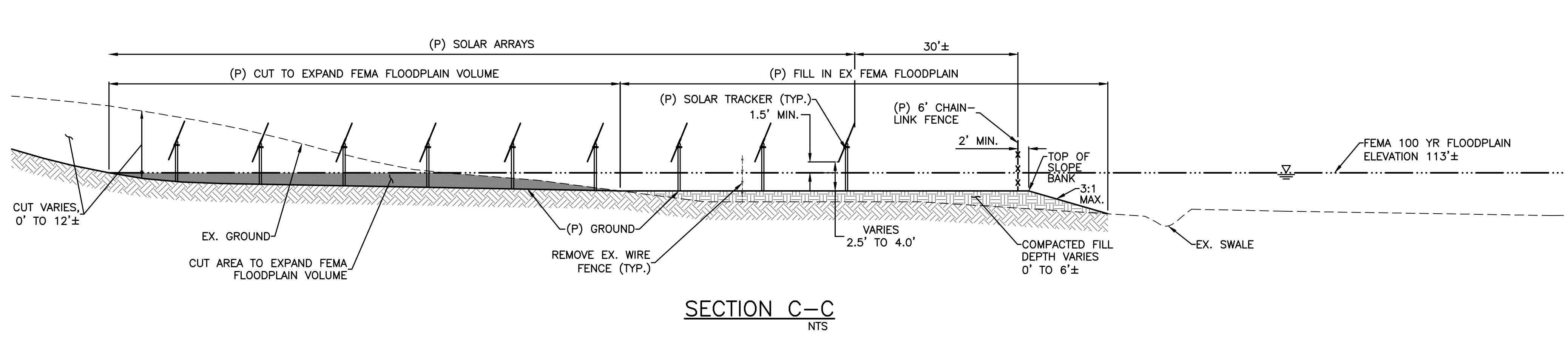
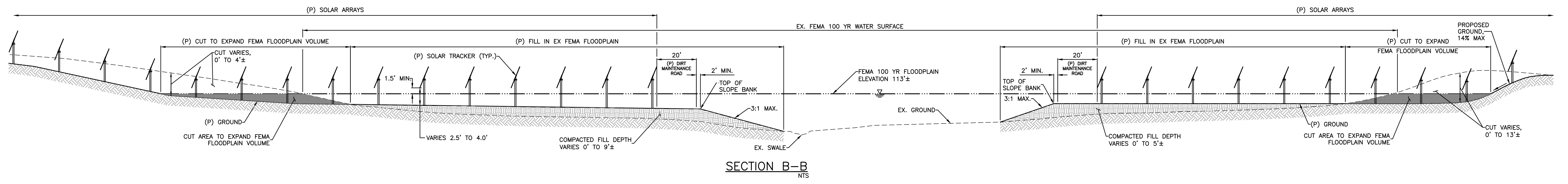
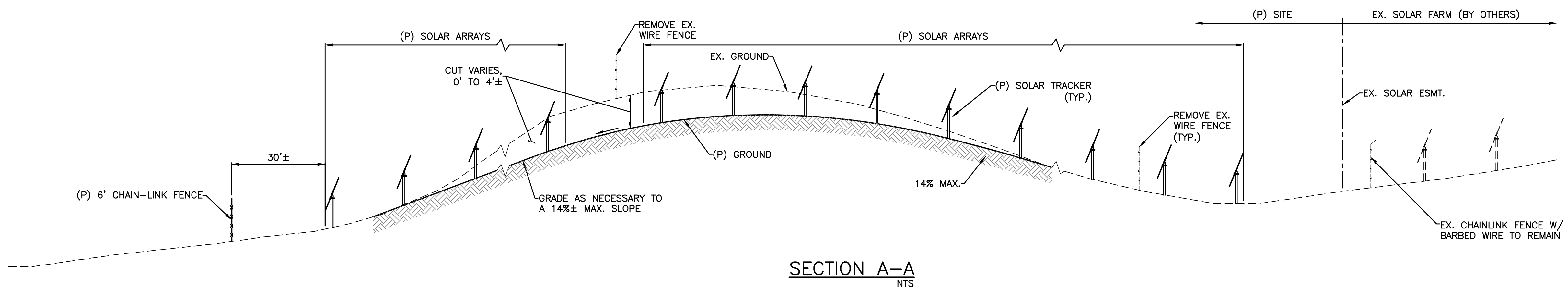
- LEGEND:**
- PROPOSED DRAINAGE FLOW DIRECTION
  - EXISTING DRAINAGE FLOW DIRECTION (FENCED)
  - PROPOSED DRAINAGE SWALE
  - GL GRADING LIMIT
  - NG NO GRADING
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  - PROPOSED SOLAR ARRAY
  - EX FENCE
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- LEGEND**
- DITCH
  - EPHEMERAL DRAINAGE
  - FRESHWATER EMERGENT WETLAND
  - INTERMITTENT DRAINAGE
  - PERERNNIAL DRAINAGE
  - POND
  - SEASONAL WETLAND
  - SEASONAL WETLAND SWALE
  - UPLAND SWALE
  - VERNAL POOL



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 8020 RUTLAND DRIVE, SUITE 19  
 CARMICHAEL, CA 95608-0515  
 Phone (916)331-4336 Fax (916)331-4430  
 EMAIL: office@bwengineers.com





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# **Appendix B**

## IPaC Report



## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Sacramento Fish And Wildlife Office  
Federal Building  
2800 Cottage Way, Room W-2605  
Sacramento, CA 95825-1846  
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To:  
Project Code: 2022-0063369  
Project Name: Sloughhouse Solar Project

July 13, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

### To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

**Migratory Birds:** In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see <https://www.fws.gov/birds/policies-and-regulations.php>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see <https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

---



Attachment(s):

- Official Species List

## **Official Species List**

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

### **Sacramento Fish And Wildlife Office**

Federal Building  
2800 Cottage Way, Room W-2605  
Sacramento, CA 95825-1846  
(916) 414-6600

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## Project Summary

Project Code: 2022-0063369  
Event Code: None  
Project Name: Sloughhouse Solar Project  
Project Type: Power Gen - Solar  
Project Description: County – Sacramento  
Public Land Survey System – Cosumnes Land Grant  
U.S. Geological Survey (USGS) 7.5-Minute Quadrangle (Quad) –  
Sloughhouse  
Latitude, Longitude (decimal degrees) – 38.473731, -121.184568  
(Centroid)  
Assessor Parcel Numbers – 12601100010000, 12601100030000  
Elevation Range/Average – 95 to 160 feet above mean sea level (amsl)/  
128 feet amsl  
PSA – 732.26 acres

### Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@38.4734833,-121.18399345831887,14z>



Counties: Sacramento County, California

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## Endangered Species Act Species

There is a total of 12 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

- 
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

### Reptiles

NAME	STATUS
Giant Garter Snake <i>Thamnophis gigas</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/4482">https://ecos.fws.gov/ecp/species/4482</a>	Threatened

### Amphibians

NAME	STATUS
California Tiger Salamander <i>Ambystoma californiense</i> Population: U.S.A. (Central CA DPS) There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/2076">https://ecos.fws.gov/ecp/species/2076</a>	Threatened

### Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/321">https://ecos.fws.gov/ecp/species/321</a>	Threatened

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## Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a>	Candidate
Valley Elderberry Longhorn Beetle <i>Desmocerus californicus dimorphus</i> There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/7850">https://ecos.fws.gov/ecp/species/7850</a>	Threatened

## Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp <i>Branchinecta conservatio</i> There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/8246">https://ecos.fws.gov/ecp/species/8246</a>	Endangered
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is <b>final</b> critical habitat for this species. Your location overlaps the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/498">https://ecos.fws.gov/ecp/species/498</a>	Threatened
Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i> There is <b>final</b> critical habitat for this species. Your location overlaps the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/2246">https://ecos.fws.gov/ecp/species/2246</a>	Endangered

## Flowering Plants

NAME	STATUS
Ione (incl. Irish Hill) Buckwheat <i>Eriogonum apricum (incl. var. prostratum)</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/8301">https://ecos.fws.gov/ecp/species/8301</a>	Endangered
Ione Manzanita <i>Arctostaphylos myrtifolia</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/1806">https://ecos.fws.gov/ecp/species/1806</a>	Threatened
Sacramento Orcutt Grass <i>Orcuttia viscida</i> There is <b>final</b> critical habitat for this species. Your location overlaps the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/5507">https://ecos.fws.gov/ecp/species/5507</a>	Endangered
Slender Orcutt Grass <i>Orcuttia tenuis</i> There is <b>final</b> critical habitat for this species. Your location overlaps the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/1063">https://ecos.fws.gov/ecp/species/1063</a>	Threatened

## Critical habitats

There are 4 critical habitats wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Sacramento Orcutt Grass <i>Orcuttia viscida</i> <a href="https://ecos.fws.gov/ecp/species/5507#crithab">https://ecos.fws.gov/ecp/species/5507#crithab</a>	Final
Slender Orcutt Grass <i>Orcuttia tenuis</i> <a href="https://ecos.fws.gov/ecp/species/1063#crithab">https://ecos.fws.gov/ecp/species/1063#crithab</a>	Final
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> <a href="https://ecos.fws.gov/ecp/species/498#crithab">https://ecos.fws.gov/ecp/species/498#crithab</a>	Final
Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i> <a href="https://ecos.fws.gov/ecp/species/2246#crithab">https://ecos.fws.gov/ecp/species/2246#crithab</a>	Final

---



## **IPaC User Contact Information**

Agency: Dudek

Name: Morgan Kennedy

Address: 853 Lincoln Way #208

City: Auburn

State: CA

Zip: 95603

Email: [mkennedy@dudek.com](mailto:mkennedy@dudek.com)

Phone: 9166612498

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# **Appendix C**

## Biological and Aquatic Resource Compensatory Mitigation Plan



## MEMORANDUM

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**To:** Alison Little, Associate Planner- Sacramento Planning and Environmental Review; Dylan Wood, Environmental Scientist- California Department of Fish and Wildlife (CDFW); Shawn Agarawal, Environmental Scientist- Central Valley Regional Water Quality Control Board (RWQCB); Matt Hirkala, Project Manager- Sacramento District U.S. Army Corps of Engineers (USACE); Emma Bickerstaff, Project Manager- U.S. Fish and Wildlife Service (USFWS)

**From:** David Hochart and Morgan Kennedy - Dudek

**cc:** Daniel Menahem - Sloughhouse Solar, LLC

**Subject:** Preliminary Biological and Aquatic Resource Compensatory Mitigation Plan, Sloughhouse Solar Project

**Date:** September 21, 2022

**Attachment(s):** 1) Figure 1, Potential Offsite Compensatory Mitigation Lands – Biological Resources

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This Memorandum (Memo) provides the Preliminary Biological and Aquatic Resource Compensatory Mitigation Plan (Plan) for the Sloughhouse Solar Project (Project) and supplements the *Final Biological Technical Report (BTR) for the Sloughhouse Solar Project* (Dudek 2022) by describing additional details on the proposed biological and aquatic resource compensatory mitigation approach to mitigate potential impacts from the Project.

## 1 Introduction

### 1.1 Project Overview

The Project is a solar photovoltaic energy-generating facility located on the southwest corner of Meiss Road and Dillard Road, adjacent to an existing solar energy facility (Dillard Road Solar Power Facility) located at 7794 Dillard Road, Sloughhouse, Sacramento County, California. The Project would construct, operate, and decommission a solar generation and energy storage facility within a Solar Development Area of approximately 371.72 acres. The Solar Development Area, or the limits of disturbance, is inclusive of solar fields, energy storage, substation[s], roads, retention basins, and all other Project infrastructure. The design and construction of the buildings, solar arrays (panels, etc.), energy storage facilities, and auxiliary facilities will be consistent with Sacramento County building standards.

## 1.2 Project Location

The approximately 732.26-acre Project Study Area (PSA), which is comprised of a Solar Development Area (371.72 acres) and Adjacent Other Lands (360.54 acres), is located at the southwest corner of the intersection of Meiss Road and Dillard Road in Sloughouse, an unincorporated area in eastern Sacramento County. The southeast portion of the PSA is comprised of an existing solar facility (Dillard Road Solar Power Facility). The remainder of the PSA is largely comprised of vacant lands used for cattle ranching. The PSA is surrounded by rural residences, specifically Simpson Ranch to the south, an existing solar facility (Dillard Road Solar Power Facility) a caviar aquaculture farm to the north, orchards, and a turkey farm to the east, and the Cosumnes River to the west. The PSA can be accessed from gates off both Dillard Road and Meiss Road.

## 2 Compensatory Mitigation Approach

The following summary of the proposed biological and aquatic resource compensatory mitigation approach is based on Project information provided in the *Final BTR for the Sloughouse Solar Project* (Dudek 2022) and is intended to supplement the Final BTR by providing additional mitigation details. The Project is in the process of obtaining all regulatory permits necessary for construction and operation, and the Project final BTR is part of the documentation developed to support those approvals. Through the permitting processes, Sacramento County (County) and the regulatory agencies may identify mitigation measures and permit conditions to achieve permitting standards that supersede or supplement the Final BTR measures, and the approach proposed within this Plan at this time, and if so, those additional measures or conditions would be anticipated to strengthen the biological resource avoidance, minimization, and mitigation (AMMs) beyond that described below.

The Project Final BTR provides comprehensive analysis of the biological and aquatic resources in the PSA and recommends a set of AMMs for resources that occur or have the potential to occur. Additionally, as noted above, the County and regulatory agencies may require additional conditions of approval or permit conditions that provide additional resource avoidance and minimization.

The following provides a summary of the potential impacts to special-status species and species habitats based on the Project Amended BTR.

- **Special-Status Plant Species:** No special-status plant species were observed during protocol-level botanical field surveys. Eight special-status plant species have a moderate potential to occur within the Solar Development Area of the PSA and could be impacted absent AMMs. These species include Boggs Lake hedge-hyssop (*Gratiola heterosepala*), dwarf downingia (*Downingia pusilla*), hoary navarretia (*Navarretia eriocephala*), legenere (*Legenere limosa*), pincushion navarretia (*Navarretia myersii* ssp. *myersii*), Sacramento Orcutt grass (*Orcuttia viscida*), slender Orcutt grass (*Orcuttia tenuis*), and valley brodiaea (*Brodiaea rosea* ssp. *vallicola*).
- **Sensitive Natural Communities:** No CDFW sensitive natural communities were identified within the Solar Development Area of the PSA and no impacts would occur. Vernal pool habitat is present within the Solar Development Area (see aquatic resources below).
- **Aquatic Resources:** Permanent impacts to waters of the U.S. and waters of the State under USACE, RWQCB, and CDFW jurisdiction in the Solar Development Area is 0.08 acre. Temporary impacts to waters of the U.S. and waters of the State under USACE, RWCB, and CDFW jurisdiction in the Solar Development Area is 3.17

acres. Indirect impacts to waters of the U.S. and waters of the State under USACE, RWCB, and CDFW jurisdiction in the solar development is 2.59.

- **Designated Critical Habitat (DCH)/Essential Fish Habitat (EFH):** No USFWS DCH or National Oceanic and Atmospheric Administration EFH was identified within the Solar Development Area of the PSA and no impacts would occur.
- **Special-Status Wildlife Species:** Seven special-status wildlife species have known occurrences within the Solar Development Area of the PSA and could be impacted absent AMMs: bald eagle, western burrowing owl (*Athene cunicularia*), Swainson's hawk (*Buteo swainsoni*), tricolored blackbird (*Agelaius tricolor*), white-tailed kite (*Elanus leucurus*), great egret (*Ardea alba*), great blue heron (*Ardea Herodias*), yellow-billed magpie (*Pica nuttalli*), valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), California linderiella, and vernal pool tadpole shrimp (*Lepidurus packardii*). Other special-status wildlife species with a moderate or high potential to occur based on potential suitable habitat in the Solar Development Area of the PSA include northwestern pond turtle (*Actinemys marmorata*), western spadefoot toad (*Spea hammondi*), American badger (*Taxidea taxus*), Ricksecker's water scavenger beetle (*Hydrochara rickseckeri*), mid-valley fairy shrimp (*Branchinecta mesovallensis*), native bats, and other nesting raptors and migratory birds. Although not detected during protocol surveys and considered to have a low potential to occur in the Solar Development Area of the PSA, AMMs have also been included for California tiger salamander (*Ambystoma californiense*) and vernal pool fairy shrimp (*Branchinecta lynchi*).
- **Protected Tree Species:** 15 individual trees, two of which are dead, are located within the Solar Development Area of the PSA and may be directly impacted by Project activities. No trees will require a Sacramento County Tree Removal Permit, as none of the trees fall within the Sacramento County Tree Preservation Ordinance requirements.

Compensatory mitigation for Project impacts to aquatic resources and specific special-status species will focus on onsite habitat preservation (within the Adjacent Other Lands of the PSA, which are outside the Solar Development Area). If necessary, compensatory mitigation may also be provided through the purchase of credits from an existing in-lieu fee program, and/or conservation/mitigation banks, and/or offsite habitat acquisition and preservation that meet the criteria established during the California Environmental Quality Act (CEQA), NEPA (National Environmental Policy Act), and regulatory permitting process. Any onsite habitat preservation and/or offsite acquisition and preservation lands used for compensatory mitigation would require legal protections (e.g., conservation easement, restrictive covenant, or other approved mechanism), funding for long-term habitat management and monitoring, and preparation of a Preserve Management Plan that describes the preserved biological and aquatic resources, responsible parties, management goals and objectives, management and monitoring activities, and reporting requirements. Funding for onsite preservation lands, or lands acquired and preserved offsite, will be estimated through preparation of a Property Analysis Record (PAR), or PAR-Equivalent Analysis, which is an itemized cost estimate of the initial and capital period costs and annual, ongoing costs.

Table 1, Preliminary Biological and Aquatic Resources Compensatory Mitigation Program for the Potential Impacts Resulting from the Sloughhouse Solar Project, provides the proposed compensatory mitigation program for the potential impacts to special-status biological and aquatic resources for the Sloughhouse Solar Project. As detailed in Table 1, the Project compensatory mitigation program proposes to provide the following compensatory mitigation:

- **Aquatic Resources and Potential Habitat for Large, Listed Branchiopods (i.e., vernal pool fairy shrimp and vernal pool tadpole shrimp):** Compensatory mitigation at the ratios and acreages listed in Table 1 and Table 2 through onsite habitat preservation and/or mitigation/preservation credit purchase from existing in-lieu



fee programs or banks. The Project site is within the service area for the Sacramento District California In-Lieu Fee Program the following existing banks: Clay Station Mitigation Bank, Bryte Ranch Conservation Bank, Laguna Creek Mitigation Bank, and Van Vleck Ranch Mitigation Bank.

- **Swainson’s Hawk, Burrowing Owl, Tricolored Blackbird, and White-Tailed Kite Foraging Habitat:** Compensatory mitigation at the ratios and acreages listed in Table 1 through one or more of the following options: onsite preservation, preservation credit purchase from existing banks, and/or offsite acquisition and preservation of lands from willing sellers. Compensatory mitigation for Swainson’s hawk and burrowing owl foraging habitat likely to benefit other species as described in Table 1.
- **Valley Elderberry Longhorn Beetle Shrub Replacement:** Compensatory mitigation for the lost elderberry shrubs (*Sambucus* sp.) at the ratios listed in Table 1 consistent with existing U.S. Fish and Wildlife Service (USFWS) guidance.

All temporary impacts to potential habitat within the Project Solar Development Area will be restored to pre-Project conditions following Project construction. The biological and aquatic resource values of the Adjacent Other Lands within the PSA, outside the Solar Development Area of the Project, are described in the Final BTR and provides documentation of suitability for compensatory mitigation. The biological and aquatic resources in the potential offsite compensatory mitigation lands are shown in the attached Figure 1, Potential Offsite Compensatory Mitigation Lands - Biological and Aquatic Resources. The attached reports (Estep 2016; Estep 2019) provide details of the habitat suitability, abundance, and distribution of Swainson’s hawk for the potential offsite compensatory mitigation lands (i.e., Van Vleck Ranch). Tricolored blackbird has known occurrences, and Swainson’s hawk and burrowing owl have known occurrences within the immediate vicinity of the potential offsite compensatory mitigation lands based on regional databases. Additionally as shown in the attached Figure 1, the potential offsite mitigation lands are located within the same South Sacramento Habitat Conservation Plan (SSHCP) Preserve Planning Unit (PPU) as the Project (i.e., PPU 5), and the available portions (i.e., outside the portion of the lands in Existing Preserve) of the offsite lands contain SSHCP modeled suitable habitat for the following species: American badger (1,623 acres), burrowing owl (1,786 acres), California tiger salamander (88 acres aquatic; 1,872 acres upland), Swainson’s hawk (11 acres nesting; 1,815 acres foraging), tricolored blackbird (1,571 acres foraging/nesting; 362 acres foraging), Valley elderberry longhorn beetle (11 acres), vernal pool fairy shrimp and vernal pool tadpole shrimp (585 acres), western pond turtle (66 acres aquatic; 1,509 upland), western spadefoot toad (189 acres breeding/foraging; 1,872 acres foraging/aestivation), western red bat (411 acres roosting/foraging; 1,689 acres foraging), and white-tailed kite (350 acres nesting; 1,876 acres foraging) (County of Sacramento et al. 2018).

**Table 1. Preliminary Biological and Aquatic Resources Compensatory Mitigation Program for the Potential Impacts Resulting from the Sloughouse Solar Project**

Special-Status Resource	Impact Type and Impact Acreage	Mitigation Ratio <sup>1</sup>	Compensatory Mitigation
<b>Special-Status Plant Species</b>			
No special-status plant species detected in the Solar Development Area	No impacts to individuals with avoidance and minimization measures (AMMs) <sup>2</sup>	Not applicable	Not applicable

**Table 1. Preliminary Biological and Aquatic Resources Compensatory Mitigation Program for the Potential Impacts Resulting from the Sloughouse Solar Project**

Special-Status Resource	Impact Type and Impact Acreage	Mitigation Ratio <sup>1</sup>	Compensatory Mitigation
Eight special-status plant species <sup>3</sup> have potential to occur in aquatic resource areas and Valley grasslands	Potential suitable habitat impacts in aquatic resources areas (see Aquatic Resources below) and valley grasslands  Permanent: 15.07 acres Temporary: 287.37 acres	Not applicable	Compensatory mitigation for potentially suitable habitat for special-status plant species is not considered necessary. Compensation provided for aquatic resources (see Aquatic Resources below) and valley grassland habitat (see Swainson’s hawk below) has the potential to benefit these species
<b>Aquatic Resources<sup>4</sup></b>			
California Department of Fish and Wildlife (CDFW) Jurisdictional Resources	Permanent: 0.08 acre	If considered occupied by listed species: 3:1	0.16 to 0.24 acres. A minimum of 1:1 (0.08 acres) must be creation; remainder can be creation or preservation. If considered occupied, compensate with occupied habitat. Fulfill through preservation onsite and/or mitigation/preservation bank credit purchase <sup>5</sup>
		If considered unoccupied: 2:1	
	Temporary: 3.17 acres	If considered occupied by listed species: 1:1	
		If considered unoccupied: 1:1	
	Indirect: 2.44 acres	If considered occupied by listed species: 2:1	
		If considered unoccupied: 1:1	
Regional Water Quality Control Board (RWQCB) Jurisdictional Resources	Permanent: 0.08 acre	If considered occupied by listed species: 3:1	0.16 to 0.24 acres. A minimum of 1:1 (0.08 acres) must be creation; remainder can be creation or preservation. If considered occupied, compensate with occupied habitat. Fulfill through preservation onsite and/or mitigation/preservation bank credit purchase <sup>5</sup>
		If considered unoccupied: 2:1	
	Temporary: 3.17 acres	If considered occupied by listed species: 1:1	
		If considered unoccupied: 1:1	
	Indirect: 2.59 acres	If considered occupied by listed species: 2:1	
		If considered unoccupied: 1:1	

**Table 1. Preliminary Biological and Aquatic Resources Compensatory Mitigation Program for the Potential Impacts Resulting from the Sloughouse Solar Project**

Special-Status Resource	Impact Type and Impact Acreage	Mitigation Ratio <sup>1</sup>	Compensatory Mitigation
U.S. Army Corps of Engineers (USACE) Jurisdictional Resources	Permanent: 0.08 acre	If considered occupied by listed species: 3:1	0.16 to 0.24 acres. A minimum of 1:1 (0.08 acres) must be creation; remainder can be creation or preservation. If considered occupied, compensate with occupied habitat. Fulfill through preservation onsite and/or mitigation/preservation bank credit purchase <sup>5</sup>
		If considered unoccupied: 2:1	
	Temporary: 3.17 acres	If considered occupied by listed species: 1:1	
		If considered unoccupied: 1:1	
	Indirect: 2.59 acres	If considered occupied by listed species: 2:1	
		If considered unoccupied: 1:1	
<b>Special-Status Wildlife Species</b>			
California tiger salamander	No impacts to individuals with AMMs	Not applicable	Not applicable
	Potential aquatic habitat:	Not applicable	Not applicable
	No impacts to occupied or suitable aquatic habitat		
	Potential upland habitat: Permanent: 15.07 acres Temporary: 287.37 acres	Not applicable	Compensatory mitigation for potential upland habitat impacts is not considered necessary. All temporary impacts to potential habitat will be restored to pre-Project conditions following Project construction. Compensation provided for valley grasslands (see Swainson’s hawk below) have the potential to benefit this species
western spadefoot toad	No impacts to individuals with AMMs	Not applicable	Not applicable



**Table 1. Preliminary Biological and Aquatic Resources Compensatory Mitigation Program for the Potential Impacts Resulting from the Sloughouse Solar Project**

Special-Status Resource	Impact Type and Impact Acreage	Mitigation Ratio <sup>1</sup>	Compensatory Mitigation
	Potential aquatic habitat:  No impacts to occupied aquatic habitat. See impacts to aquatic resources above for impacts to suitable aquatic habitat	Not applicable	Compensatory mitigation for suitable aquatic habitat for species is not considered necessary. Compensation provided for aquatic resources (see aquatic resources above) has the potential to benefit this species
	Potential upland habitat:  Permanent: 15.07 acres Temporary: 287.37 acres	Not applicable	Compensatory mitigation for potential upland habitat is not considered necessary. All temporary impacts to potential habitat will be restored to pre-Project conditions following Project construction. Compensation provided for valley grasslands (see Swainson’s hawk below) have the potential to benefit this species
northwestern pond turtle	No impacts to individuals with AMMs	Not applicable	Not applicable
	Potential aquatic habitat:  No impacts to occupied or suitable aquatic habitat	Not applicable	Not applicable
	Potential upland habitat:  Permanent: 15.07 acres Temporary: 287.37 acres	Not applicable	Compensatory mitigation for potential upland habitat is not considered necessary. All temporary impacts to potential habitat will be restored to pre-Project conditions following Project construction. Compensation provided for valley grasslands (see Swainson’s hawk below) have the potential to benefit this species
western burrowing owl	No impacts to nesting or non-nesting individuals with AMMs	Not applicable	Not applicable
	Potential nesting, wintering, and/or foraging habitat:  Permanent: 15.07 acres Temporary: 287.37 acres	See Swainson’s hawk below	All temporary impacts to potential habitat will be restored to pre-Project conditions following Project construction. Compensation provided for valley grasslands (see Swainson’s hawk below) will also provide suitable habitat to offset impacts to western burrowing owl

**Table 1. Preliminary Biological and Aquatic Resources Compensatory Mitigation Program for the Potential Impacts Resulting from the Sloughouse Solar Project**

Special-Status Resource	Impact Type and Impact Acreage	Mitigation Ratio <sup>1</sup>	Compensatory Mitigation
Swainson's hawk	No impacts to nesting individuals with AMMs	Not applicable	Not applicable
	Foraging habitat:  Permanent: 15.07 acres, Temporary: 287.37 acres  Solar Development Area includes 357.61 acres of valley grassland habitat suitable for foraging. 78.75 acres would likely be unavailable for foraging beneath solar arrays; 278.86 acres would remain available as foraging habitat	1:1 restoration of temporary impacts onsite  1:1 compensatory mitigation for potentially lost foraging acreage <sup>6</sup>	All temporary impacts to potential habitat will be restored to pre-Project conditions following Project construction. 78.75 acres of compensatory mitigation for potentially lost foraging acreage <sup>6</sup> . Fulfill through preservation onsite, grassland restoration and management to promote foraging, mitigation/preservation bank credit purchase <sup>5</sup> , or offsite acquisition and preservation from willing seller. Compensatory mitigation acreage should provide suitable foraging habitat for Swainson's hawk, western burrowing owl, tricolored blackbird, and white-tailed kite. The biological resources onsite and outside the Solar Development Area (as documented in the Final BTR) and/or on the potential offsite mitigation land (shown in the attached Figure 1 and attached reports) would fulfill this compensatory mitigation
tricolored blackbird	No impacts to nesting individuals or colonies with AMMs	Not applicable	Not applicable
	Potential foraging habitat:  Permanent: 15.07 acres Temporary: 287.37 acres	See Swainson's hawk above	All temporary impacts to potential habitat will be restored to pre-Project conditions following Project construction. Compensation provided for valley grasslands (see Swainson's hawk above) will also provide suitable habitat to offset impacts to tricolored blackbird
white-tailed kite	No impacts to nesting individuals or colonies with AMMs	Not applicable	Not applicable
	Potential foraging habitat:  Permanent: 15.07 acres Temporary: 287.37 acres	See Swainson's hawk above	All temporary impacts to potential habitat will be restored to pre-Project conditions following Project construction. Compensation provided for valley grasslands (see Swainson's hawk above) will also provide suitable habitat to offset impacts to white-tailed kite

**Table 1. Preliminary Biological and Aquatic Resources Compensatory Mitigation Program for the Potential Impacts Resulting from the Sloughouse Solar Project**

Special-Status Resource	Impact Type and Impact Acreage	Mitigation Ratio <sup>1</sup>	Compensatory Mitigation
valley elderberry longhorn beetle	One shrub is within 165 feet of the Solar Development Area and will not be removed.	Not applicable	The elderberry shrub will be retained and a 165 foot avoidance/no-disturbance buffer will be employed
	2 elderberry shrubs impacted	1:1	2 elderberry shrubs mitigated in accordance with the USFWS <i>Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle and the Conservation Guidelines for the Valley Elderberry Longhorn Beetle</i>
vernal pool fairy shrimp, and vernal pool tadpole shrimp	USFWS assumed presence. Potential aquatic habitat impacted:  Permanent: 0.08 acre Indirect: 2.59 acres Temporary: 3.17 acres	Permanent 3:1 Indirect 2:1 Temporary 1:1	See USACE- aquatic resources above
American badger	No impacts to individuals with AMMs	Not applicable	Not applicable
	Potential upland habitat:  Permanent: 15.07 acres Temporary: 287.37 acres	Not applicable	Compensatory mitigation for potential American badger habitat is not considered necessary. All temporary impacts to potential habitat will be restored to pre-project conditions following Project construction. Compensation provided for valley grasslands (see Swainson’s hawk above) has the potential to benefit this species
native bats	No impacts to roosting individuals or maternity colonies with AMMs	Not applicable	Not applicable
	Potential foraging habitat:  Permanent: 15.07 acres Temporary: 287.37 acres	Not applicable	Compensatory mitigation for potential bat foraging habitat is not considered necessary. All temporary impacts to potential habitat will be restored to pre-Project conditions following Project construction. Compensation provided for valley grasslands (see Swainson’s hawk above) have the potential to benefit these species



**Table 1. Preliminary Biological and Aquatic Resources Compensatory Mitigation Program for the Potential Impacts Resulting from the Sloughhouse Solar Project**

Special-Status Resource	Impact Type and Impact Acreage	Mitigation Ratio <sup>1</sup>	Compensatory Mitigation
nesting raptors and migratory birds	No impacts to nesting individuals with AMMs	Not applicable	NA
	Potential nesting and foraging habitat:  Permanent: 15.07 acres Temporary: 287.37 acres	Not applicable	Compensatory mitigation for potential nesting and foraging habitat is not considered necessary. All temporary impacts to potential habitat will be restored to pre-Project conditions following Project construction. Compensation provided for valley grasslands (see Swainson’s hawk above) have the potential to benefit these species

**Notes:**

- <sup>1</sup> Mitigation ratio is the ratio (compensation acreage to impact acreage) assumed to be required by the Sacramento County (County) and/or regulatory agencies to calculate the required compensatory mitigation acreage. Mitigation ratios and the resources requiring compensatory mitigation subject to change based discussions with the County and regulatory agencies to achieve applicable regulatory and permitting standards.
- <sup>2</sup> AMMs include additional pre-activity botanical surveys according to standard guidelines. If special-status plant species are detected at that time, avoidance measures will be implemented. If avoidance is not possible, a Botanical Mitigation Plan will be prepared to compensate for the unavoidable impacts to achieve applicable California Endangered Species Act (CESA) and Federal Endangered Species Act (FESA) permitting standards.
- <sup>3</sup> Special-status species with a moderate potential to occur in Solar Development Area: Boggs Lake hedge-hyssop, dwarf downingia, hoary navarretia, legenera, pincushion navarretia, Sacramento Orcutt grass, slender Orcutt grass, and valley brodiaea
- <sup>4</sup> Aquatic resource impacts and mitigation are separated into the regulatory agencies with jurisdiction. Compensatory mitigation may be the same for all regulatory agencies if they meet the applicable permitting requirements of each agency. Mitigation ratios, compensatory mitigation acreage, and proposed mitigation approach subject to approval from the County and regulatory agencies. Aquatic resources have the potential to provide habitat for large, listed Branchiopod species (i.e., vernal pool fairy shrimp and vernal pool tadpole shrimp). This Plan assumes the regulatory agencies will consider the aquatic resources to be occupied by these species (despite the negative protocol-level wet and dry season survey results).
- <sup>5</sup> The Project site is within the service area for the following existing in-lieu fee program and banks: Sacramento District California In-Lieu Fee Program, Clay Station Mitigation Bank, Bryte Ranch Conservation Bank, Laguna Creek Mitigation Bank, and Van Vleck Ranch Mitigation Bank.
- <sup>6</sup> The Project proposes to compensate for potential lost foraging acreage beneath solar arrays; however, most of this acreage (i.e., areas not permanently impacted by project components) would likely continue to provide habitat and refuge for Swainson’s hawk prey species following construction of the Project. See attached report on Swainson’s hawk foraging use of solar array fields within agricultural landscapes in Sacramento County (Estep 2021).

### 3 References

County of Sacramento, City of Rancho Cordova, City of Galt, Sacramento County Water Agency, Sacramento Regional County Sanitation District, and the Southeast Connector Joint Powers Authority. 2018. *Final South Sacramento Habitat Conservation Plan*. January 2018. <https://planning.saccounty.net/PlansandProjectsIn-Progress/Pages/SSHCPPlan.aspx>.

Dudek. 2022. Final Biological Technical Report for the *Sloughhouse Solar Project*. Prepared for Sloughhouse Solar, LLC. Sacramento, California. July 2022.

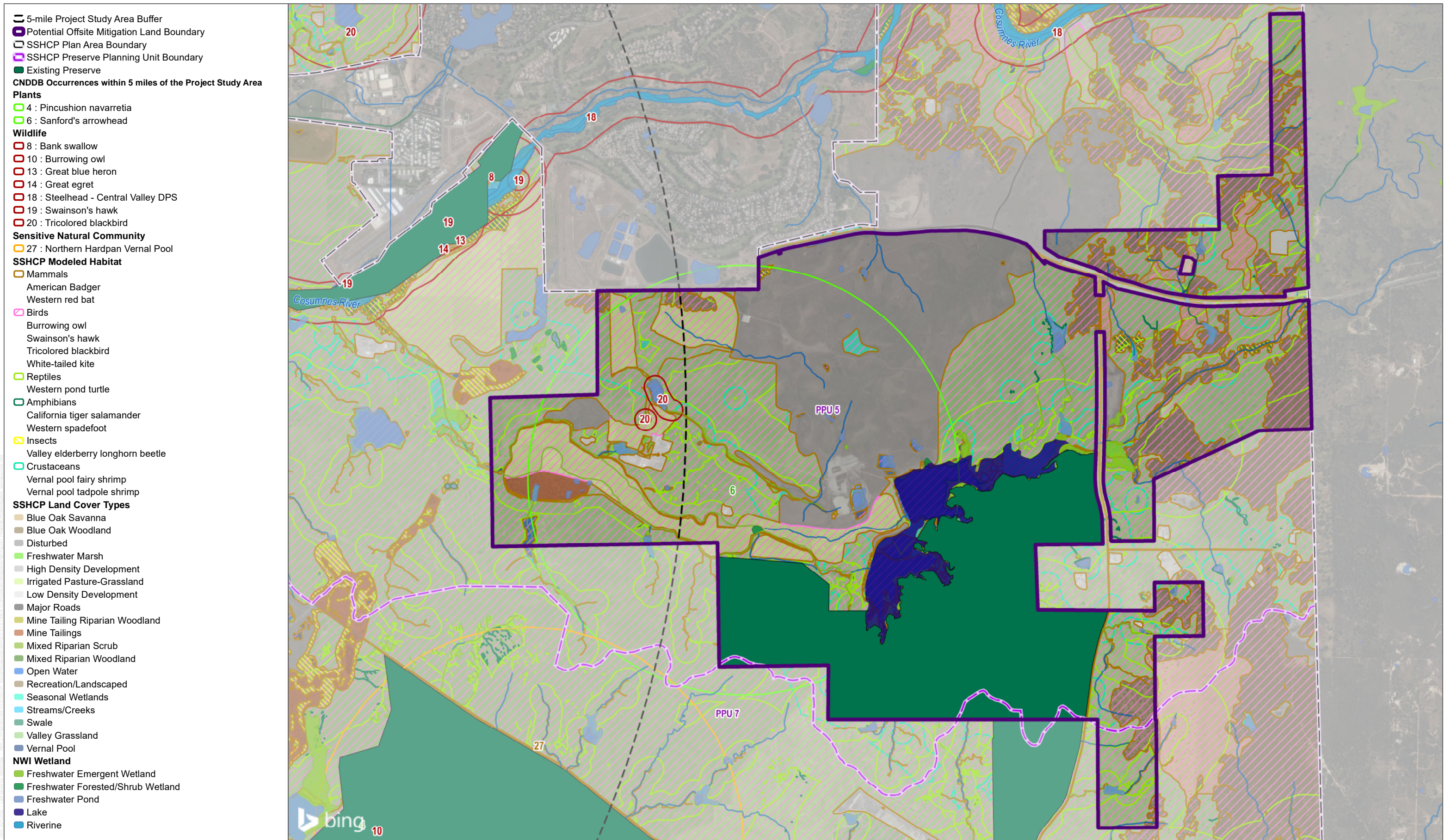
Estep (Estep Environmental Consulting). 2016. Habitat Suitability Assessment for the State-listed Swainson's Hawk on the Van Vleck Ranch, Sacramento County. Prepared for Downy Brand, LLC. October.

Estep. 2019. Distribution and Abundance of the Swainson's Hawk on and in the Vicinity of the Van Vleck Ranch, Sacramento County. Prepared for Downy Brand, LLP. August.

Estep. 2021. Swainson's Hawk and Other Raptor Foraging Use of Solar Array Fields within an Agricultural Landscape in Sacramento County Year 2. Prepared for Dudek. November.

SSLLC. 2022. *Biological and Aquatic Resource Compensatory Mitigation Plan, Sloughhouse Solar Project*. Prepared by Dudek. Sacramento, California: Dudek. April 2021.





SOURCE: Bing Maps 2022; Sacramento County 2019



**FIGURE 1**  
 Potential Offsite Compensatory Mitigation Lands - Biological and Aquatic Resources  
 Sloughouse Solar Project



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## **Appendix D**

USFWS Dry Season Protocol Survey Letter Report for  
Federally Listed Branchiopods, Sloughouse Solar  
Project, Sacramento County, California  
(USFWS#2020-TA-3007)

February 11, 2021

12957

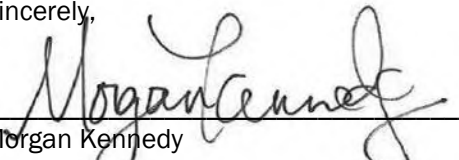
Samantha Lantz and Ian Perkins-Taylor  
USFWS, Sacramento Field Office  
Listing and Recovery Division  
2800 Cottage Way W-2605  
Sacramento, CA 95825-1888

**Subject:** *U.S. Fish and Wildlife Service Dry Season Protocol Survey Letter Report for Federally Listed Branchiopods, Sloughhouse Solar Project, Sacramento County, California (USFWS#2020-TA-3007)*

Dear Ms. Lantz and Mr. Perkins-Taylor:

This U.S. Fish and Wildlife Service (USFWS) Dry Season Protocol Survey Letter Report (Report) for federally listed branchiopods has been prepared in accordance with the USFWS *Survey Guidelines for the Listed Large Branchiopods*<sup>1</sup> and to fulfill reporting requirements in accordance with the 10(a)(1)(A) permit holders recovery permits. . This Report provides a complete overview of the dry season surveys conducted for the Sloughhouse Solar Project (Project). If you have any questions regarding this Report, or need any additional information, please feel free to call or email me at (916) 661-2498, mkennedy@dudek.com.

Sincerely,



Morgan Kennedy

Environmental Compliance Manager, Ecologist

Att.: A) USFWS Dry Season Survey Request and Authorization.  
B) Dry Soil Analysis for the Detection of Federally-Listed Large Branchiopods at the Proposed Sloughhouse Project, Sacramento County, California (USFWS# 2020-TA-3007) (Helm Biological Consulting 2021)  
C) Figure 1- Project Location  
D) Figure 2- Project Soils  
E) Figure 3- Project Hydrology  
F) Figure 4- Project Vegetation Communities and Land Cover  
G) Figure 5- USFWS Dry Season Protocol Survey Results for Federally Listed Branchiopods  
H) Photo Record

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<sup>1</sup> USFWS (U.S. Fish and Wildlife Service). November 13, 2017. Survey Guidelines for the Large Listed Branchiopods. United State Department of the Interior. USFWS, Pacific Southwest Region. Accessed October-November 2020. <https://www.fws.gov/ventura/docs/species/protocols/vpshrimp/shrimp2017.pdf>.



# 1 Introduction

This Report documents the results of the dry season surveys for vernal pool branchiopods conducted within the Project Study Area (PSA) located in south eastern Sacramento County, California. Surveys focused on the determination of presence/no presence for the federally threatened vernal pool fairy shrimp (*Branchinecta lynchi*) and federally endangered vernal pool tadpole shrimp (*Lepidurus packardii*). Surveys were performed in accordance with the protocols listed above. No dry season surveys have been previously conducted as part of the Project.

The request to conduct dry season surveys was submitted to the USFWS on September 28, 2020 and approved by the USFWS on September 29, 2020 (Attachment A). Dry season surveys were conducted over nine total days within the PSA in October and November 2020. Dry season surveys were led and performed by Section 10(a)(1)(A) permitted Dudek biologists Heather Moine (TE-60147A-1) and Paul Lemons (TE-051248-6). Each permitted biologist was supported by Dudek biologists with appropriate field experience including Laura Burris, Anna Godinho, Emily Scricca, and Allie Sennett. Soil samples were submitted to Dr. Brent Helm at Helm Biological Consulting<sup>2</sup> (HBC) to process the dry soil samples for the presence of cysts from fairy shrimp and tadpole shrimp and to culture cysts to identify to species-level, as permitted as a special condition in the 10(a)(1)(A) permit held by HBC (Attachment B). A summary of dry season survey dates, PSA environmental conditions, and biologists conducted the surveys is provided in Table 1 below.

**Table 1. Summary of Dry Season Survey Dates, Site Conditions, and Biologists Present**

Date of Survey	Site Conditions	Permitted Biologist	Assisting Biologists
October 13, 2020	66–90 °F; 0–10% cloud cover; 0–6 mph wind	Heather Moine <sup>a</sup>	Allie Sennett
October 14, 2020	62–91 °F; 0% cloud cover; 1–7 mph wind	Heather Moine	Allie Sennett
October 15, 2020	57–90 °F; 0% cloud cover; 0–5 mph wind	Heather Moine	Emily Scricca
October 19, 2020	55–89 °F; 0% cloud cover; 0–4 mph wind	Heather Moine	Laura Burris
October 20, 2020	54–88 °F; 0% cloud cover; 0–4 mph wind	Heather Moine, Paul Lemons <sup>b</sup>	Laura Burris, Anna Godinho, Emily Scricca, and Allie Sennett
October 21, 2020	54–88 °F; 0% cloud cover; 0–4 mph wind	Heather Moine, Paul Lemons	Laura Burris, Anna Godinho, Emily Scricca, and Allie Sennett
October 22, 2020	56–78 °F; 0% cloud cover; 0–6 mph wind	Heather Moine	Anna Godinho, Allie Sennett
October 23, 2020	45–59 °F; 0% cloud cover; 0–3 mph wind	Heather Moine	Anna Godinho
November 11, 2020	42–58 °F; 80–90% cloud cover; 0–4 mph wind	Heather Moine	Anna Godinho, Allie Sennett

<sup>a</sup> Heather Moine (TE-60147A-1)

<sup>b</sup> Paul Lemons (TE-051248-6)

<sup>2</sup> Helm Biological Consulting. Contact: Dr. Brent Helm (TE-795930-10.2), 4600 Karchner Road, Sheridan, CA 95681, 530-633-0220.

## 2 Project Setting

### 2.1 Location

The approximately 741.20-acre PSA is located at the southwest corner of the intersection of Meiss Road and Dillard Road in the unincorporated community of Sloughhouse within south eastern Sacramento County. The PSA excludes existing solar facilities within the site. The PSA is primarily used for cattle grazing or other agricultural operations, and there is an existing solar facility located in the southeast corner of the site (Attachment C). Project location details are detailed as follows:

- County: Sacramento.
- Public Land Survey System: Cosumnes Land Grant.
- U.S. Geological Survey (USGS) 7.5-Minute Quadrangle (Quad): Sloughhouse.
- Latitude, Longitude: 38.473731, -121.184568 (centroid, decimal degrees).
- Assessor Parcel Numbers (APNs): 12601100010000, 12601100030000.
- Elevation Range: 95 to 160 feet above mean sea level (amsl).
- Average Elevation: 128 feet amsl.
- PSA: 741.20 acres.

### 2.2 Soils

According to the Natural Resources Conservation Service<sup>3</sup>, 16 soil units are present within the PSA (Attachment D). Each soil unit, typical landform or geomorphic position within the landscape, drainage class (i.e., frequency and duration of wet periods in conditions similar to those in which it was developed), hydric listing, and total area is detailed in Table 2 below.

**Table 2. Summary of Soil Units Within the Project Study Area (PSA)**

Soil Map Unit Name	Landform	Drainage Class	Hydric?	Total Area (acres)
Bruella sandy loam, 0-2% slopes	Terraces	Well-drained	No	27.11
Bruella sandy loam, 2-5% slopes	Terraces	Well-drained	No	34.84
Columbia sandy loam, drained, 0-2% slopes, occasionally flooded	Flood plains	Somewhat poorly drained	Yes	17.93

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<sup>3</sup> USDA (U.S. Department of Agriculture). 2021. "Web Soil Survey". USDA, Natural Resources Conservation Service, Soil Survey Staff. Accessed February 2021. <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>.

**Table 2. Summary of Soil Units Within the Project Study Area (PSA)**

Soil Map Unit Name	Landform	Drainage Class	Hydric?	Total Area (acres)
Galt clay, 0–1% slopes, MLRA 17	Basin floors on fan remnants	Somewhat poorly drained	Yes	33.0
Galt clay, 0–4% slopes, MLRA 17	Basin floors on fan remnants	Moderately well drained	Yes	126.62
Hadselville-Pentz complex, 2–30% slopes	Hills	Moderately well drained to well drained	No	231.74
Peters clay, 1–8% slopes	Hills	Well drained	No	56.94
Redding gravelly loam, 0–8% slopes, MLRA 17	Fan remnants	Moderately well drained	No	15.29
Reiff fine sandy loam, 0–2% slopes, occasionally flooded	Flood plains	Well drained	No	96.11
Sailboat silt loam, drained, 0–2% slopes, occasionally flooded, MLRA 17	Flood plains on natural levees	Somewhat poorly drained	Yes	3.50
San Joaquin silt loam, 0–3% slopes	Terraces	Moderately well drained	No	14.02
San Joaquin silt loam, 3–8% slopes	Terraces	Moderately well drained	No	54.45
San Joaquin-Durixeralfs complex, 0–1% slopes	Terraces	Moderately well drained to well drained	No	0.25
San Joaquin-Galt complex, leveled, 0–1% slopes	Terraces	Moderately well drained	Yes	2.83
San Joaquin-Galt complex, 0–3% slopes	Terraces	Moderately well drained	Yes	17.35
San Joaquin-Xerarents complex, leveled, 0–1% slopes	Terraces	Moderately well drained to well drained	No	6.32

Source: USDA 2021

### 2.3 Watershed and Hydrology

The PSA is located within the Upper Cosumnes River watershed, which drains approximately 180 square miles of land in El Dorado, Amador, and Sacramento Counties (Hydrological Unit Code 1804001306<sup>4</sup>. A complex of seasonally inundated aquatic features generally drains the Project in a southwesterly direction, and the Cosumnes River flows within the western boundary of PSA. The western half of the PSA is located within the National Flood Hazard Layer 1% 100-year floodplain of the Cosumnes River<sup>5</sup>. However, the Cosumnes River within the PSA is bounded by levees intended to contain the river and protect against overtopping during a normal rain year (Attachment E).

<sup>4</sup> CDFW (California Department of Fish and Wildlife). 2020. Biogeographic Information and Observation System: BIOS viewer version 5.94.01. Accessed December 2020. <http://www.dfg.ca.gov/biogeodata/bios/>.

<sup>5</sup> Federal Emergency Management Agency (FEMA). 2019. National Flood Hazard Layer 1% 100-Year Floodplain. Accessed December 2020. <https://www.fema.gov/flood-maps/products-tools/national-flood-hazard-layer>.



## 2.4 Vegetation Communities and Land Cover

General vegetation communities and land cover types were documented within the PSA during the dry season surveys (Attachment F) and include the following:

- Agricultural/ (Low Density) Developed/ Urban- This land cover type includes areas that have been completely altered by human activities and contain little to no vegetation or a composite of agricultural cover crops and escaped cultivars. Such areas include buildings, paved and gravel roadways and trails, gravel lots, and other constructed environments. Disturbed/developed areas on the PSA include two residences along Meiss Road.
- California Annual Grassland- This is the dominant vegetation community present in the PSA. Dominant species in this community include soft brome (*Bromus hordeaceus*), medusa head (*Elymus caput-medusae*), and narrow tarweed (*Holocarpha virgata*). The shrub and tree layer are absent from this vegetation community. There are numerous aquatic features that occur throughout the grassland.
- Valley Oak Woodland- This general vegetation community specifically includes a composite mixed riparian woodland and valley foothill riparian. Valley oak woodland comprises the riparian corridor adjacent to the Cosumnes River, a portion of which is located within the PSA. Valley oak (*Quercus lobata*) was the dominant overstory species, with a lesser abundance of Fremont's cottonwood (*Populus fremontii*), Goodding's black willow (*Salix gooddingii*), Northern California walnut (*Juglans hindsii*), and coast live oak (*Quercus agrifolia*). Shrubs occurred intermittently and included Himalayan blackberry (*Rubus armeniacus*) and California grape (*Vitis californica*). The herbaceous layer was dominated by disturbance-tolerant upland species, including yellow star-thistle (*Centaurea solstitialis*), Italian plumeless thistle (*Carduus pycnocephalus*), and non-native grasses like those described for California annual grassland.

## 3 Methodology

### 3.1 Field Survey and Soil Collection

For the dry season surveys, soil samples were collected from the bottom of each known aquatic resource when the soil was very dry, and a small 6-inch hand trowel was used to excavate between ten samples (approximately 100 milliliter each) and 100 samples (approximately 100 milliliter each) of soil. Samples were collected equidistantly along two generally perpendicular transects (lengthwise [transect A] and widthwise [transect B]), incorporating the deepest regions of the aquatic feature, and thoroughly sampling the aquatic feature surface area. Immediately after sample collection, the soil was carefully placed into plastic sample bag and labeled according to aquatic feature, transect, and position. Sample bags from each aquatic feature were then placed into a larger bag for organization.

### 3.2 Soil Processing

Soil samples were collected from the aquatic features and submitted in November 2020 for processing by HBC, authorized USFWS Recovery Permit number TE-795930-10.2 of Section 10(a)(1)(A) of the Federal Endangered

Species Act, 16 U.S.C. 1531 et seq., and its implementing regulations. At the HBC laboratory, a brine solution was prepared by mixing table salt (NaCl) with lukewarm tap water in a large container. The collected soil material was placed in the brine solution. The soil material was then gently worked by hand to breakdown any persistent soil structure. The organic material rising to the top of the brine solution was skimmed off and placed in a 600-micron diameter pore-size sieve stacked atop a 75-micron diameter pore-size sieve. The soil material was processed through the top sieve by flushing it with lukewarm tap water while gently rubbing it with a soft-bristle brush. The soil retained from the 75-micron diameter pore size sieve was then removed and thinly ( $\approx 1.0$  millimeter) spread into plastic petri dishes and examined.

### 3.3 Cyst Culturing

The contents of each petri dish were examined under a 10 to 252-power zoom binocular microscope. A minimum of 30 minutes was spent searching the contents of each petri dish for large branchiopod cysts (embryonic eggs). HBC’s large branchiopod cyst collection and scanning electron micrographs of cysts were used to identify and compare any cysts observed within the soil samples. This processing method (described above) favors the detection of cysts belonging to the genera *Branchinecta*, *Lepidurus*, and *Streptocephalus* since these three genera have species that are federally listed. Evidence of other aquatic macroinvertebrates encountered were also noted on the laboratory datasheet. Please view the attached dry season report by HBC for more detailed information regarding dry season soil analysis (Attachment B).

## 4 Results

Soil samples were collected from a total of 67 aquatic resource features (Attachment G). All soil samples were collected by Dudek and processed and analyzed by HBC for evidence of large branchiopods. No evidence of federally listed large branchiopods (i.e., cysts belonging to the genus *Branchinecta* or *Lepidurus* or carapaces of *Lepidurus*) were observed in the soils collected. However, cysts belonging to the non-listed California fairy shrimp (*Linderiella occidentalis*) were observed in the soils collected from six features (ID-01, P-02, SW-17, SW-18, SWS-07, and VP-15). A complete summary of results has been provided in Table 3 below. Additionally, photo plates of the PSA and various aquatic features samples have been provided (Attachment H).

**Table 3. Results Summary of Dry Season Soil Samples**

Feature ID	Insects Exo-Skeletons	Micro-Turbellarian Cysts	Cladocera Ephyppia	Ostracod Cysts/Carapaces	Hydracarina	Nematoda	Collembola	Abundance of <i>Linderiella occidentalis</i> Cysts <sup>a</sup>
D-01	X		X				X	
ED-02	X	X	X			X	X	
ED-05		X	X				X	
ID-01	X	X	X	X	X	X	X	Low

**Table 3. Results Summary of Dry Season Soil Samples**

Feature ID	Insects Exo-Skeletons	Micro-Turbellarian Cysts	Cladocera Ehipippia	Ostracod Cysts/Carapaces	Hydracarina	Nematoda	Collembola	Abundance of <i>Linderiella occidentalis</i> Cysts <sup>a</sup>
P-02	X	X	X	X		X	X	Low
SW-01	X						X	
SW-03	X	X				X	X	
SW-05						X	X	
SW-06	X	X				X	X	
SW-07	X	X	X				X	
SW-08	X					X	X	
SW-09	X					X	X	
SW-10	X					X	X	
SW-13	X	X				X	X	
SW-15	X	X	X	X	X		X	
SW-17	X	X	X	X		X	X	Low
SW-18	X	X				X	X	Low
SW-19	X	X	X	X	X	X	X	
SW-20	X	X	X	X		X	X	
SW-21		X				X	X	
SW-22	X		X	X		X	X	
SW-23	X	X				X	X	
SW-24	X	X			X	X	X	
SW-25	X		X			X	X	
SW-26	X	X				X	X	
SW-27	X	X				X	X	
SW-28	X	X	X			X	X	
SW-29	X	X	X	X		X	X	
SW-30	X	X	X			X	X	
SW-32	X					X	X	
SW-34	X	X	X	X		X		
SW-36	X					X	X	
SW-37		X	X	X		X	X	
SW-38	X	X				X	X	
SW-39			X					
SW-41	X	X				X	X	
SW-43	X	X	X			X	X	
SW-44	X	X	X			X	X	
SW-45	X	X	X	X			X	
SW-46	X	X	X	X		X	X	
SW-47	X	X	X			X	X	
SW-48	X	X	X			X	X	
SW-50						X	X	



**Table 3. Results Summary of Dry Season Soil Samples**

Feature ID	Insects Exo-Skeletons	Micro-Turbellarian Cysts	Cladocera Ehippia	Ostracod Cysts/Carapaces	Hydracarina	Nematoda	Collembola	Abundance of <i>Linderiella occidentalis</i> Cysts <sup>a</sup>
SWS-02	X	X	X			X	X	
SWS-04	X	X	X	X	X	X	X	
SWS-05	X	X		X		X	X	
SWS-06	X						X	
SWS-07	X	X	X	X	X	X	X	Low
SWS-09	X	X				X	X	
SWS-10	X	X	X	X		X		
SWS-11		X	X			X	X	
SWS-40	X	X		X	X	X	X	
VP-01	X	X	X	X	X	X	X	
VP-02		X	X	X		X	X	
VP-03	X	X	X			X	X	
VP-04						X	X	
VP-05	X		X				X	
VP-06	X		X		X		X	
VP-07	X	X	X	X		X	X	
VP-09				X		X	X	
VP-10	X	X				X	X	
VP-11	X	X	X			X	X	
VP-12	X	X	X	X	X	X	X	
VP-13	X	X	X	X		X	X	
VP-14	X	X	X	X		X	X	
VP-15	X	X	X	X	X	X	X	Low
VP-16	X	X	X	X		X	X	

Source: Helm Biological Consulting 2021 (Attachment B)

<sup>a</sup> Abundance categories are derived from USFWS’s Survey Guidelines for the Listed Large Branchiopods - Section VI(d) (none = no cysts found in sample; low abundance = estimate of 1-10 cysts/100 milliliter soil; medium abundance = estimate of 11-50 cysts/100 milliliter soil; high abundance = estimate of more than 50 cysts/100 milliliter soil).

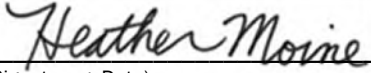
Ms. Samantha Lantz

Subject: USFWS Dry Season Protocol Survey Letter Report for Federally Listed Branchiopods, Sloughhouse  
Solar Project, Sacramento County, CA


---

## 5 Conclusion

I certify that the information in this Report for the dry season surveys conducted within the PSA and attached exhibits fully and accurately represents my work (also see Attachment B).

 2/11/2021  
(Signature + Date)

Heather Moine (TE-60147A-1)  
Senior Biologist, Dudek

 2/11/2021  
(Signature + Date)

Paul Lemons (TE-051248-6)  
Senior Biologist, Dudek



# Attachment A

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USFWS Dry Season Survey Request and Authorization



**From:** [Lantz, Samantha M](#)  
**Sent:** Tuesday, September 29, 2020 10:23 AM  
**To:** [Morgan Kennedy](#)  
**Cc:** [David Hochart](#); [Michael Henry](#); [Perkins-Taylor, Ian E](#)  
**Subject:** Re: (EXTERNAL) FW: USFWS Survey Request For Large Listed Branchiopods (Sacramento County)

---

You may consider this email authorization to conduct wet season and dry season surveys for large listed branchiopods in the proposed Sloughhouse Project survey area in Sacramento County, per the conditions of the relevant recovery permits (TE-53771B; TE-031848; TE-051248; TE-60147A; TE-813545) and as specified in your email request dated September 28, 2020.

Remember to carry a copy of your permit(s) while doing the work and to follow the terms and conditions of the permit(s), including the reporting requirements. In your report(s), please include which activities were authorized, the names of all persons involved in each activity, their recovery permit numbers, if applicable, and the date of this authorization, to help ensure that we correctly record the fulfillment of the reporting requirement under this authorization. We ask that you use UTM coordinates for all spatial data. Please use **Service reference number 2020-TA-3007** and send reports to me and Ian Perkins-Taylor (biologist in our Sac Valley division) (cced here).

Best,

Sam

---

Samantha Lantz, PhD  
Fish and Wildlife Biologist  
USFWS, Sacramento Field Office  
Listing and Recovery Division  
2800 Cottage Way W-2605  
Sacramento, CA 95825-1868  
Phone: 916-414-6526  
Pronouns: she/her/hers

In an effort to slow the spread of the coronavirus (COVID-19), staff in the Sacramento Fish and Wildlife Office have implemented an aggressive telework schedule. At this time, we are responding to requests for information via email or phone as often as possible as we do not have the in-office capacity to support regular mail service. We appreciate your understanding.

---

September 25, 2020

12957

U.S. Fish and Wildlife Service  
Pacific Southwest Region (Region 8)  
2800 Cottage Way, Room W-2605  
Sacramento, CA 95825  
916.414.6600

**Subject:** *Request to the U.S. Fish and Wildlife Service to Conduct Wet and Dry Season Large Listed Branchiopod Surveys, Proposed Sloughhouse Project, Sacramento County, California*

Dear Sir or Madam:

Dudek is providing this request to the U.S. Fish and Wildlife Service (USFWS) to conduct both wet season and dry season surveys for large listed branchiopods (i.e., vernal pool fairy shrimp [*Branchinecta lynchi*] and vernal pool tadpole shrimp [*Lepidurus packardii*]) in the proposed Sloughhouse Project (Project) survey area (Attachment 1).

## Proposed Project and Survey Area

The survey area for the proposed Project could include a total of approximately 741.20 acres, pending on-going proposed Project design efforts (Attachment 2). According to the USFWS, the survey area is located in 'Survey Zone A' of California for listed large branchiopods.

## Potential Branchiopod Habitat

For the purpose of this request, Dudek evaluated potential branchiopod habitat within the survey area based on the following desktop data resources:

- California Aquatic Resources Inventory (CARI).<sup>1</sup>
- National Wetland Inventory (NWI).<sup>2</sup>
- South Sacramento Habitat Conservation Plan (SSHCP) land cover types.<sup>3</sup>
- U.S. Geological Society (USGS) National Hydrography dataset (NHD).<sup>4</sup>

The desktop evaluation of potential branchiopod habitat in the survey area found a total of 41.27 acres of potential habitat, as summarized in Table 1 below.

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<sup>1</sup> SFEI (San Francisco Estuary Institute and the Aquatic Science Center). CARI. 2020. Accessed September 2020. <https://www.sfei.org/cari>.

<sup>2</sup> USFWS. 2020. NWI. Accessed September 2020. <https://www.fws.gov/wetlands/>.

<sup>3</sup> Sacramento County. 2019. SSHCP. Accessed September 2020. <https://planning.saccounty.net/PlansandProjectsIn-Progress/Pages/SSHCPPlan.aspx>.

<sup>4</sup> USGS. 2020. National Hydrography. Accessed September 2020. <https://www.usgs.gov/core-science-systems/ngp/national-hydrography>.

**Table 1. Summary of Potential Branchiopod Habitat Feature Types in Proposed Project Survey Area**

Aquatic Feature Type	Total of Individual Features in the Survey Area	Total Acreage of Features in Survey Area
Freshwater emergent wetland	4	13.92
Freshwater pond	3	1.32
Depressional seasonal feature	6	3.94
Individual vernal pool	79	17.34
Swale	45	4.00
Other- Depressional	1	0.75
<b>Totals</b>	<b>138</b>	<b>41.27</b>

The survey area does not contain USFWS Designated Critical Habitat (DCH). Specifically, there are DCH occurrences of vernal pool fairy shrimp (Unit VERFS 14B), and vernal pool tadpole shrimp (Unit VERTS 9A) approximately 1.4 miles southwest of the survey area.

## Survey Request Overview

Dudek would like to initiate dry season surveys as soon as possible in the survey area pending USFWS approval. If possible, the dry season surveys would be conducted before the 2020 through 2021 wet season (i.e., prior to November 1). In the case that precipitation events occur prior to the dry season survey timing detailed above, the dry season surveys for the proposed Project will be shifted to the following dry season (i.e., beginning May 2020).

Wet season surveys would commence approximately two weeks following the first precipitation events of the wet season (i.e., mid-November 2020); specifically when aquatic features hold greater than three centimeters of water 24 hours after a rain event. Wet season surveys would then continue every 14 days until the aquatic feature dries, or a minimum of 90 consecutive days of inundation have occurred. If pools dry down during the wet season and then inundate again, surveys will be re-initiated for those pools even if the 90 days of inundation have already occurred.

## Dry Season Survey

The dry season surveys will be conducted in accordance with the USFWS *Survey Guidelines for the Listed Large Branchiopods*<sup>5</sup>. Soil samples will be collected from the top centimeter, or one to three centimeters below overburden, of the aquatic features that have the potential to be branchiopod habitat. Soil samples will be collected when they are dry to avoid damaging or destroying cysts. A hand trowel, or similar instrument, will be used to collect approximately one liter volume sample per aquatic feature. Soil samples will be collected in chunks. The soil from each sampling location will be stored in separate bags and labeled with the specific location details from within the aquatic feature from which the sample was taken. A sketch of the aquatic feature

<sup>5</sup> USFWS. May 31, 2015. Survey Guidelines for the Large Listed Branchiopods. United State Department of the Interior. USFWS, Pacific Southwest Region. Accessed September 2020. [https://www.fws.gov/sacramento/es/Survey-Protocols-Guidelines/Documents/VernalPoolBranchiopodSurveyGuidelines\\_20150531.pdf](https://www.fws.gov/sacramento/es/Survey-Protocols-Guidelines/Documents/VernalPoolBranchiopodSurveyGuidelines_20150531.pdf).



showing the specific location of each soil sample location will be drawn. Photographs and field notes of each survey areas physical characteristics will also be recorded.

Per the USFWS guidelines, soil samples will be collected, stored, sieved, and cysts will be identifies as genus *Branchinecta* or *Lepidurus* if possible. Soil samples containing any residual moisture initially will be adequately ventilated and allowed to air dry thoroughly before storage of the sample. The bags containing the soil samples will be kept out of direct sunlight in order to avoid excessively heating the sample.

A total of 10 soil samples of approximately 100 ml each will to be taken from each aquatic feature, for a total soil sample volume of approximately one liter per aquatic feature.

In addition to the dry season survey request, Dudek would also like to request permission to culture/hydrate cysts in the laboratory once soils have been prepared. This will allow for the identification of adult branchiopods to the species-level. Specifically, washed and sieved soil fractions from the 300 um and 150 um sieves will be examined under a dissecting microscope for fairy shrimp or tadpole shrimp cysts. The process will be repeated until all individual soil samples have been examined. All sieved material will be processed and dried as quickly as possible, preferably within one hour from the initial wetting. Cyst density information for each soil sample location will be calculated by dividing the total number of cysts recovered by the total amount of soil from the individual aliquots from that soil sample location. Total cyst density information for each soil sample location will be reported for each species in terms of the following: none; 1 to 25 cysts/100 ml soil; 26 to 50 cysts/100 ml soil; 51 to 100 cysts/100 ml soil; 101 to 199 cysts/100 ml soil; or more than 200 cysts/100 ml soil. If cysts can be identified to the species-level, then one of three methods to determine species will be applied: 1) hydrate and grow them out, though this is not always feasible due to the many factors that go into hatching and growing fairy shrimp; 2) suspend the survey and agree that they are of a listed species; or (3) complete a subsequent wet season survey according to the full protocol. Voucher specimens of adult branchiopods will be preserved, identified to the species level and transferred to an approved repository.

The results of the dry season survey will be documented within a protocol-level report. The report will include a discussion of the survey methodology and adequacy, including a description of any resource documents referenced and field survey methods used during the survey work. The report will include appropriate tables and graphics to meet the reporting requirements of the USFWS. According to USFWS requirements, the report will be submitted within 90 days of completing the survey.

## Wet Season Survey

Protocol-level wet season surveys will also be conducted in accordance with the USFWS guidelines and timing during the wet season as identified above. At each wet season visit, representative portions of the bottom, edges, and vertical water column of the aquatic feature shall be adequately sampled using a seine, dip net or aquarium net appropriate for the size of the feature. As part of the wet season surveys, Dudek will also sample water quality (i.e., pH, total dissolved solids/electro-conductivity, and temperature), and document empirical observations made at each aquatic feature surveyed. Photographs and field notes on each survey areas physical characteristics will be recorded.

The results of the wet season survey will be documented within a protocol-level report. The report will include a discussion of the survey methodology and adequacy, including a description of any resource documents referenced

and field survey methods used during the survey work. The report will include appropriate tables and graphics to meet the reporting requirements of the USFWS. According to USFWS requirements, the report will be submitted within 90 days of completing the survey.

## Survey Personnel

Dudek may employ several of our permitted biologists to conduct wet and dry season surveys in the proposed Project survey area. Each permitted biologist will be accompanied by one or more supporting biological staff that have had appropriate field experience to assist in these surveys. Table 2 below lists all Dudek biologists that hold a Recovery 10(a)(1)(a) Permit, and/or supporting biological field staff that that Dudek has is requesting to have approved to conduct large listed branchiopod surveys in the proposed Project survey area.

**Table 2. Dudek Survey Personnel Reference**

Name (Title)	USFWS 10(a)(1)(A) Recovery Permit	Survey Designation
Bergman, Erin	TE53771B-2	Biologist- Lead
Burris, Laura	N/A	Field Biologist- Support
Godinho, Anna	N/A	Field Biologist- Support
Henry, Ryan	TE031848-4	Biologist- Lead
Henry, Michael	N/A	Field Biologist- Support
Keating, Paul	N/A	Field Biologist- Support
Kennedy, Morgan	N/A	Field Biologist- Support
Leis, Michelle	N/A	Field Biologist- Support
Lemons, Paul	TE051248-6	Biologist- Lead
Moine, Heather	TE60147A-1	Biologist- Lead
Ortega, Brock	TE813545-9	Biologist- Lead
Scricca, Emily	N/A	Field Biologist- Support
Sennett, Allie	N/A	Field Biologist- Support

If you have any questions regarding this request, please feel free to contact me anytime at morgkennedy@gmail.com, 916.661.2498. Thank you for your consideration.

Sincerely,



Morgan Kennedy  
Environmental Compliance Manager

Att.: 1) Figure 1. Project Location Map  
2) Figure 2. Project Survey Area Map  
3) Figure 3. Project Area and Preliminary Survey Location Map



# Attachment 1

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Figure 1. Project Location Map





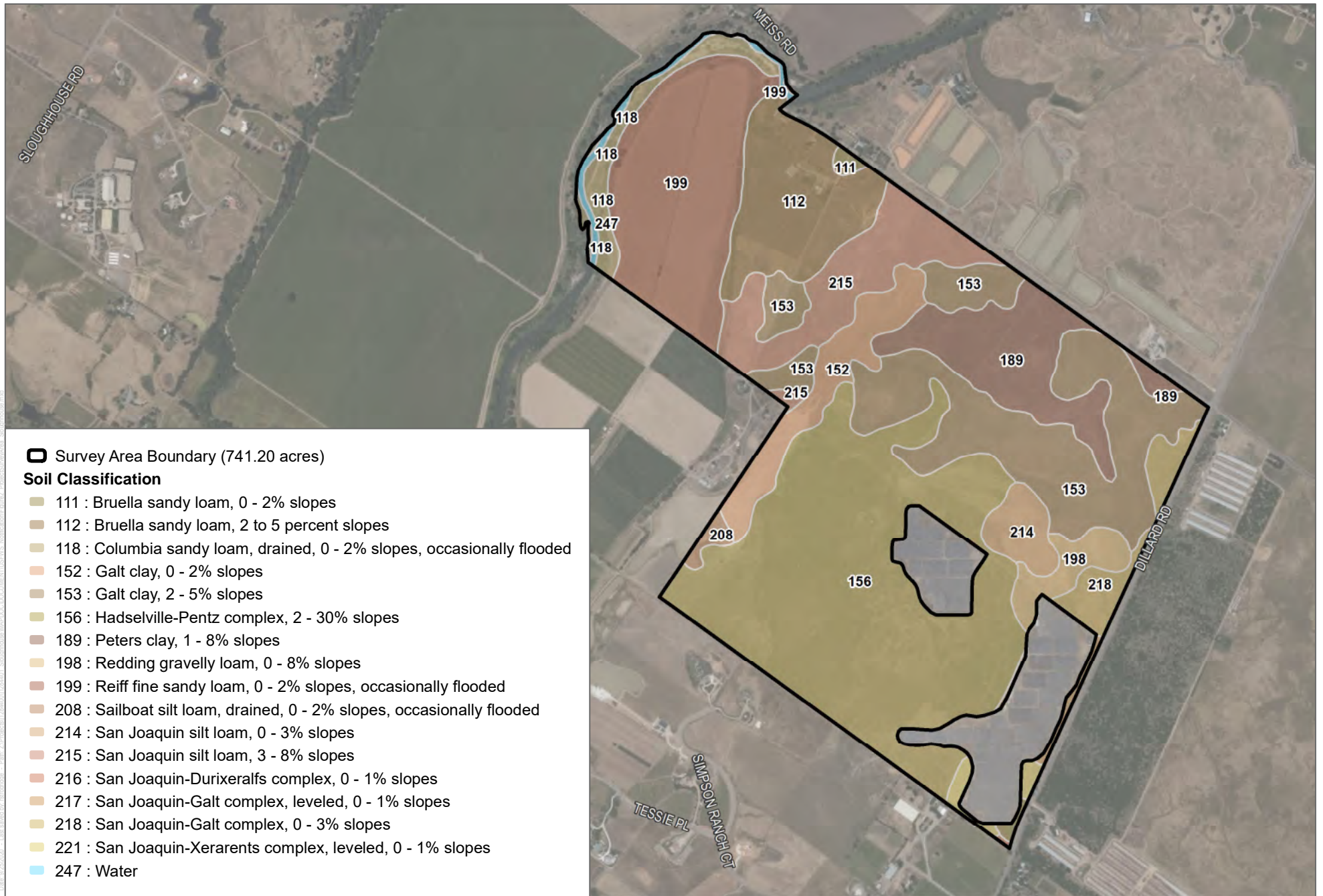


# Attachment 2

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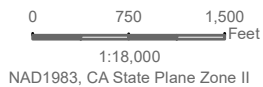
Figure 2. Project Survey Area Map





SOURCE: Bing Maps 2019, USDA 2019, Sacramento County

**DUDEK**



Sloughhouse Project (Category: Other) - USFWS Listed Large Branchiopod Survey Notification, City of Sloughhouse, Sacramento County

**FIGURE 2**

**Project Survey Area Map**





# Attachment 3

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Figure 3. Project Area and Preliminary Survey Locations Map





SOURCE: Bing Maps 2019, SFEI CARI 2019, NWI 2019, Sacramento County

**DUDEK**

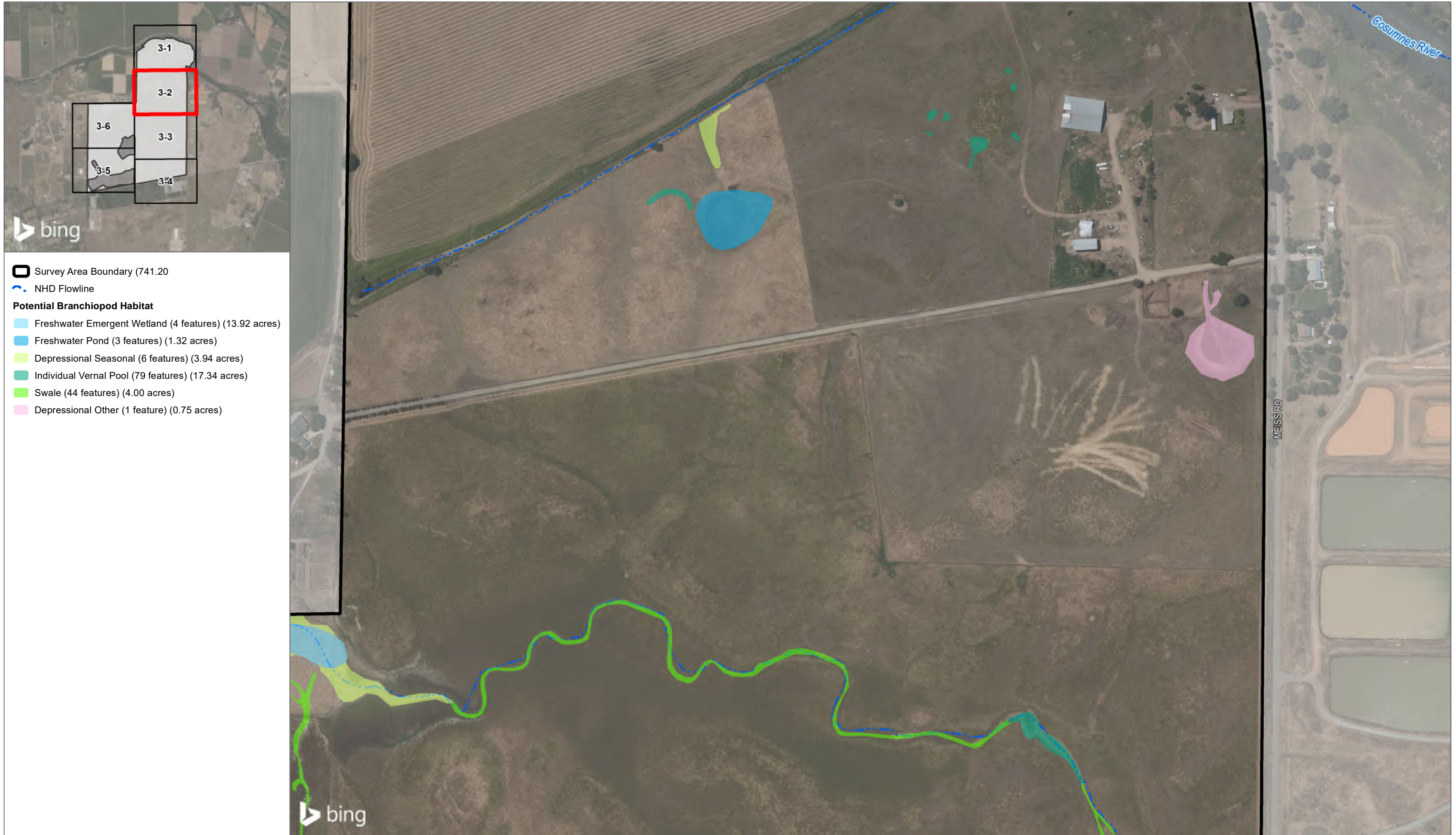
0 137.5 275 Feet  
1:3,300  
NAD1983, CA State Plane Zone II

**FIGURE 3-1**

Project Area and Preliminary Survey Locations Map

Sloughouse Project (Category: Other) - USFWS Listed Large Branchiopod Survey Notification, City of Sloughouse, Sacramento County





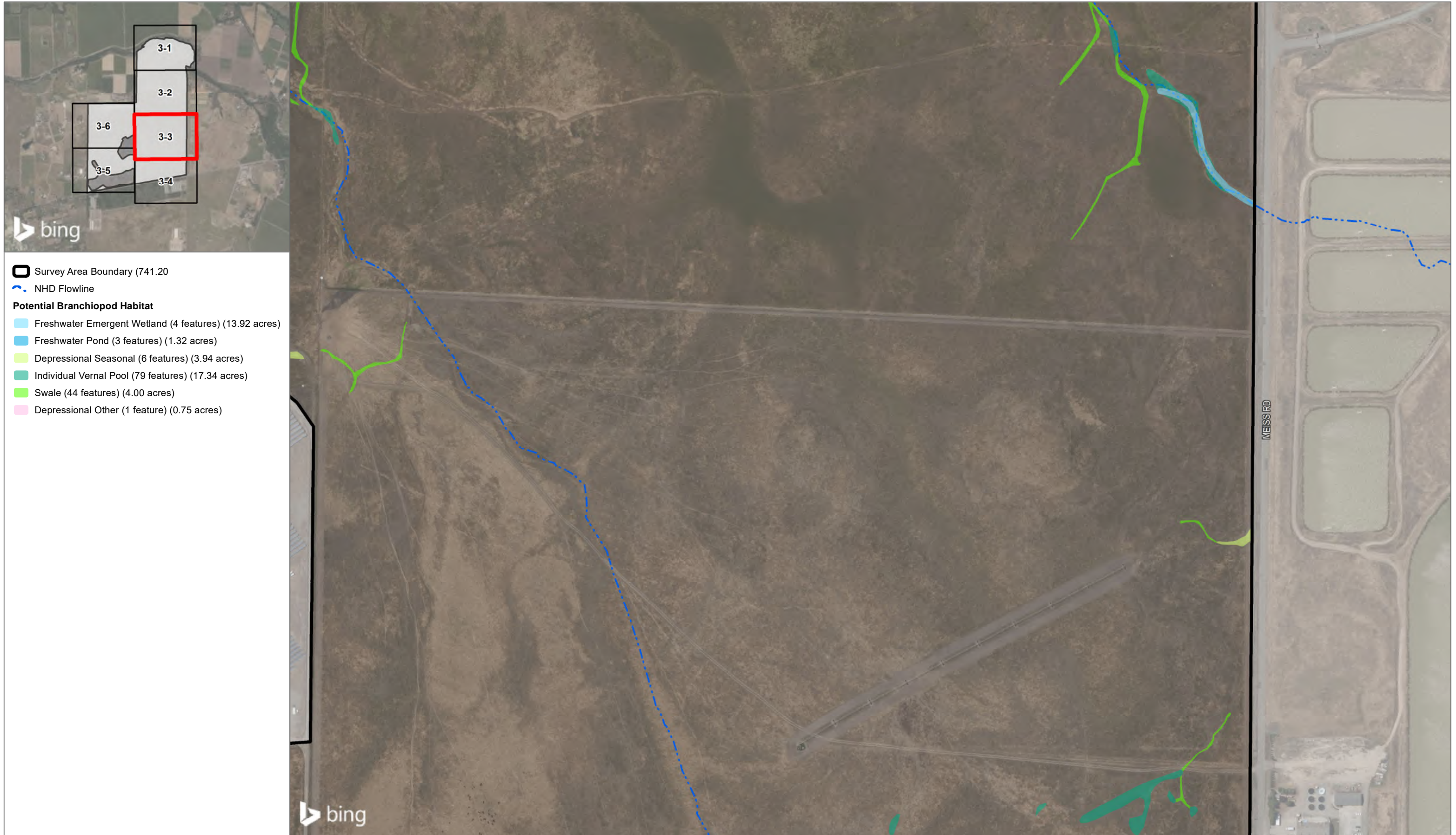
SOURCE: Bing Maps 2019, SFEI CARI 2019, NWI 2019, Sacramento County

**FIGURE 3-2**

**Project Area and Preliminary Survey Locations Map**

Sloughouse Project (Category: Other) - USFWS Listed Large Branchiopod Survey Notification, City of Sloughouse, Sacramento County





- Survey Area Boundary (741.20)
- ~ NHD Flowline
- Potential Branchiopod Habitat**
- Freshwater Emergent Wetland (4 features) (13.92 acres)
- Freshwater Pond (3 features) (1.32 acres)
- Depressional Seasonal (6 features) (3.94 acres)
- Individual Vernal Pool (79 features) (17.34 acres)
- Swale (44 features) (4.00 acres)
- Depressional Other (1 feature) (0.75 acres)

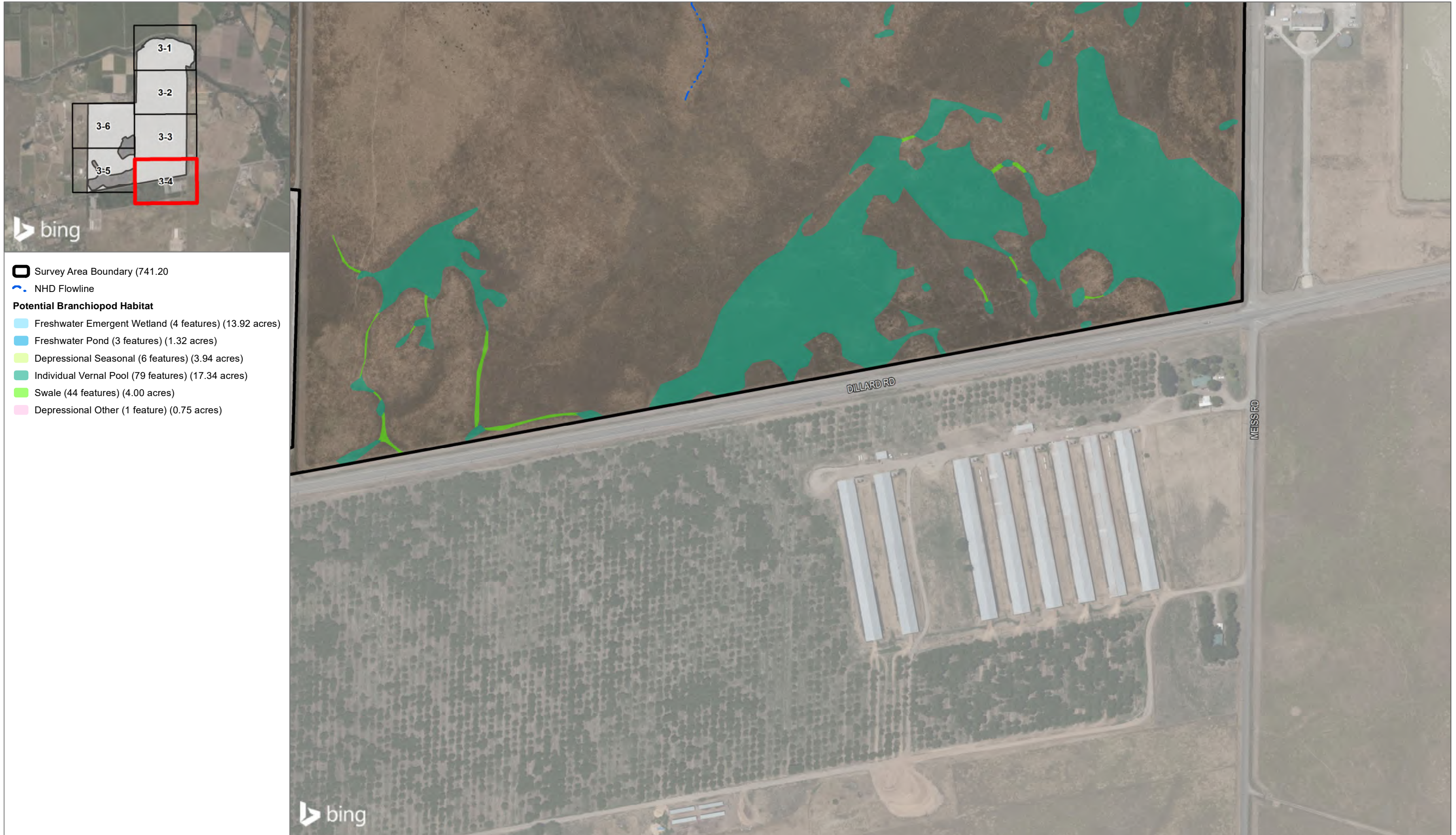
SOURCE: Bing Maps 2019, SFEI CARI 2019, NWI 2019, Sacramento County

**FIGURE 3-3**

**Project Area and Preliminary Survey Locations Map**

Sloughouse Project (Category: Other) - USFWS Listed Large Branchiopod Survey Notification, City of Sloughouse, Sacramento County





- Survey Area Boundary (741.20)
- ~ NHD Flowline
- Potential Branchiopod Habitat**
- Freshwater Emergent Wetland (4 features) (13.92 acres)
- Freshwater Pond (3 features) (1.32 acres)
- Depressional Seasonal (6 features) (3.94 acres)
- Individual Vernal Pool (79 features) (17.34 acres)
- Swale (44 features) (4.00 acres)
- Depressional Other (1 feature) (0.75 acres)

SOURCE: Bing Maps 2019, SFEI CARI 2019, NWI 2019, Sacramento County

**DUDEK**

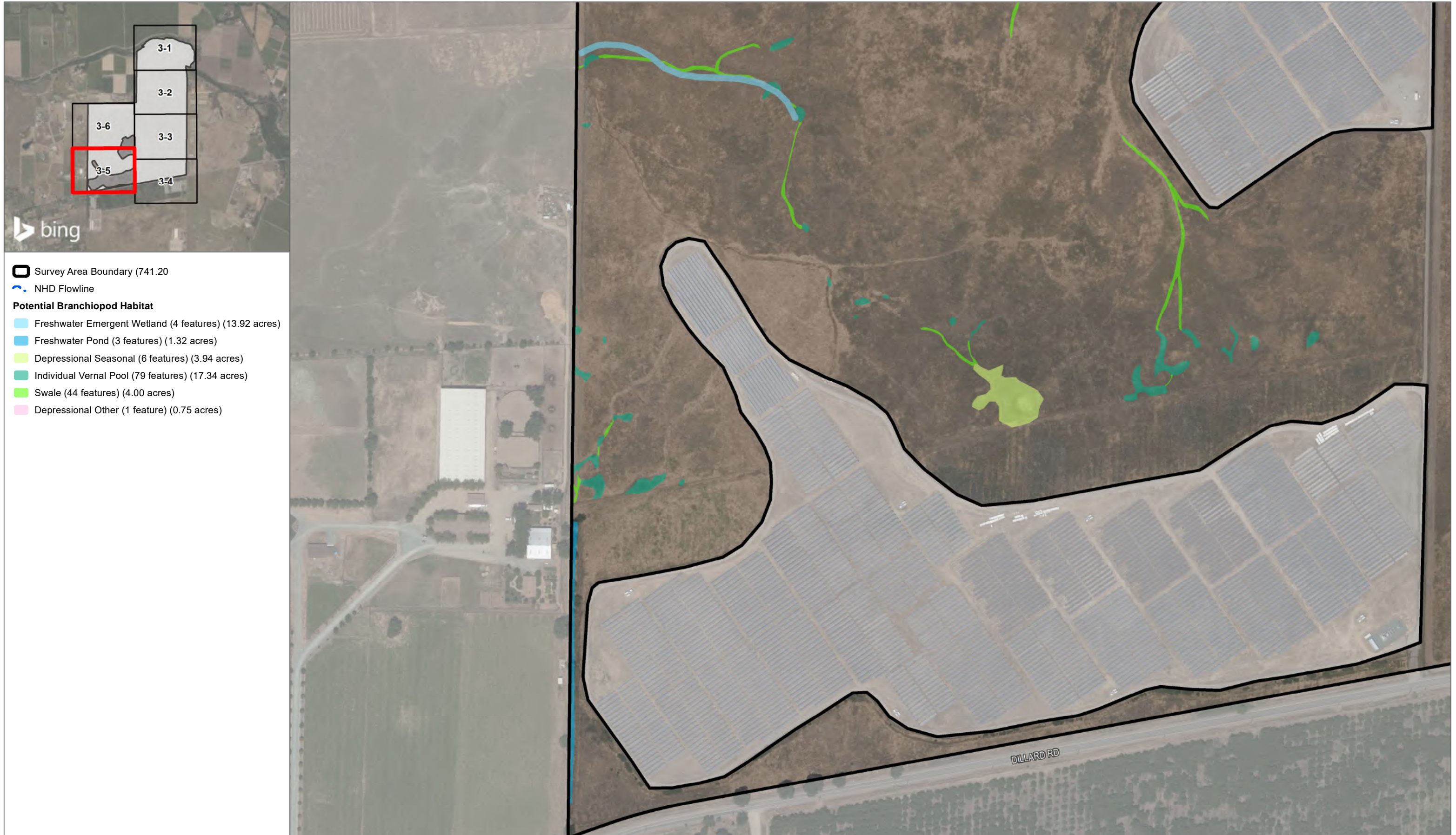
0 137.5 275 Feet  
1:3,300  
NAD1983, CA State Plane Zone II

**FIGURE 3-4**

Project Area and Preliminary Survey Locations Map

Sloughouse Project (Category: Other) - USFWS Listed Large Branchiopod Survey Notification, City of Sloughouse, Sacramento County



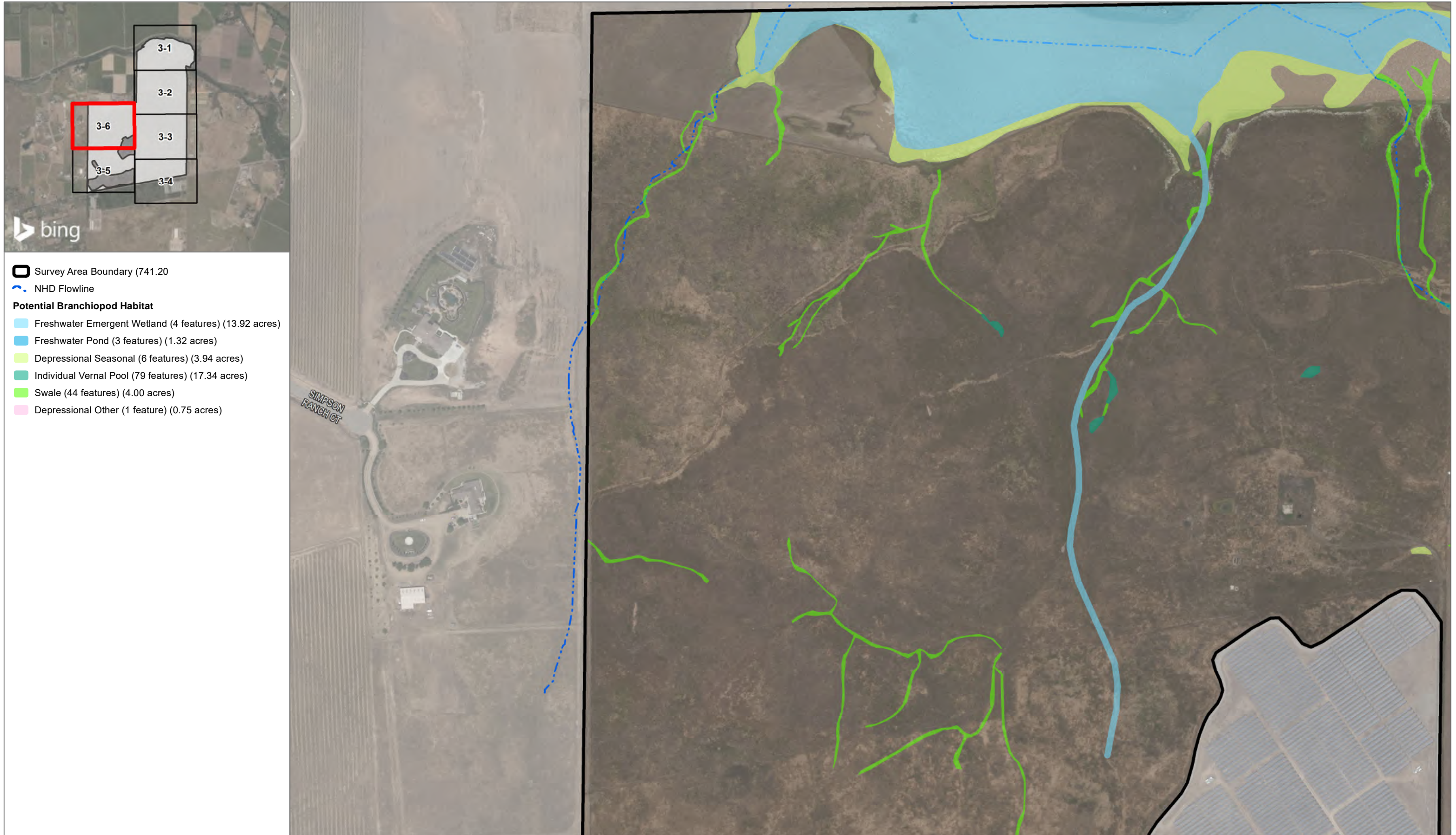


SOURCE: Bing Maps 2019, SFEI CARI 2019, NWI 2019, Sacramento County

**FIGURE 3-5**

Project Area and Preliminary Survey Locations Map





SOURCE: Bing Maps 2019, SFEI CARI 2019, NWI 2019, Sacramento County

**DUDEK**

0 137.5 275 Feet  
1:3,300  
NAD1983, CA State Plane Zone II

**FIGURE 3-6**

Project Area and Preliminary Survey Locations Map

Sloughouse Project (Category: Other) - USFWS Listed Large Branchiopod Survey Notification, City of Sloughouse, Sacramento County



# Attachment B

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Dry Soil Analysis for the Detection of Federally-Listed Large  
Branchiopods at the Proposed Sloughhouse Project,  
Sacramento County, California (USFWS#2020-TA-3007)  
(Helm Biological Consulting 2021)



**DRY SOIL ANALYSIS  
FOR THE  
DETECTION OF  
FEDERALLY-LISTED LARGE BRANCHIOPODS  
AT THE  
PROPOSED SLOUGHHOUSE PROJECT,  
SACRAMENTO COUNTY, CALIFORNIA  
(USFWS# 2020-TA-3007)**



*Prepared for:*



**DUDEK**  
858 Lincoln Way, Suite 208  
Auburn, CA 95603  
*Contact: Morgan Kennedy*  
(530) 863-4276 ext. 3976

*Prepared by:*



**HELM BIOLOGICAL CONSULTING**  
4600 Karchner Road  
Sheridan, CA 95681  
*Contact: Dr. Brent Helm*  
(530) 633-0220

**January 2021**





**DRY SOIL ANALYSIS  
FOR THE  
DETECTION OF  
FEDERALLY-LISTED LARGE BRANCHIOPODS  
AT THE  
PROPOSED SLOUGHHOUSE PROJECT,  
SACRAMENTO COUNTY, CALIFORNIA  
(USFWS# 2020-TA-3007)**

**INTRODUCTION**


Helm Biological Consulting (HBC), a division of Tansley Team, Inc., was contracted by Dudek to perform an analysis of soils collected from dry seasonally inundated depressions (hereafter “basins”) at the Proposed Sloughhouse Project (hereafter “Project”), for the presence of large branchiopods (fairy shrimp, tadpole shrimp) that are listed as threatened or endangered under the federal Endangered Species Act (e.g., vernal pool fairy shrimp [*Branchinecta lynchi*] and the vernal pool tadpole shrimp [*Lepidurus packardii*]).

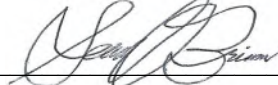
The Project could include a total of approximately 741.20 acres, pending on-going proposed Project design efforts (Figure 1). The Project is located immediately west of Dillard Road, south of Meiss Road, and east of the Consumes River in Sacramento County, California. Additionally, the Project is located in an unsectioned portion of Township 7 North, Range 7 East, and Mt. Diablo Base & Meridian (MDB&M) of the Sloughhouse U.S. Geological Survey (USGS) 7.5-minute quadrangle map. The Project’s approximate center coordinates (World Geodetic System 1984 [WGS84]) are: 38.471667°, -121.180248°.

The remainder of this report discusses the methods and results of the soil examinations to determine the presence of federally-listed large branchiopods at the Project.

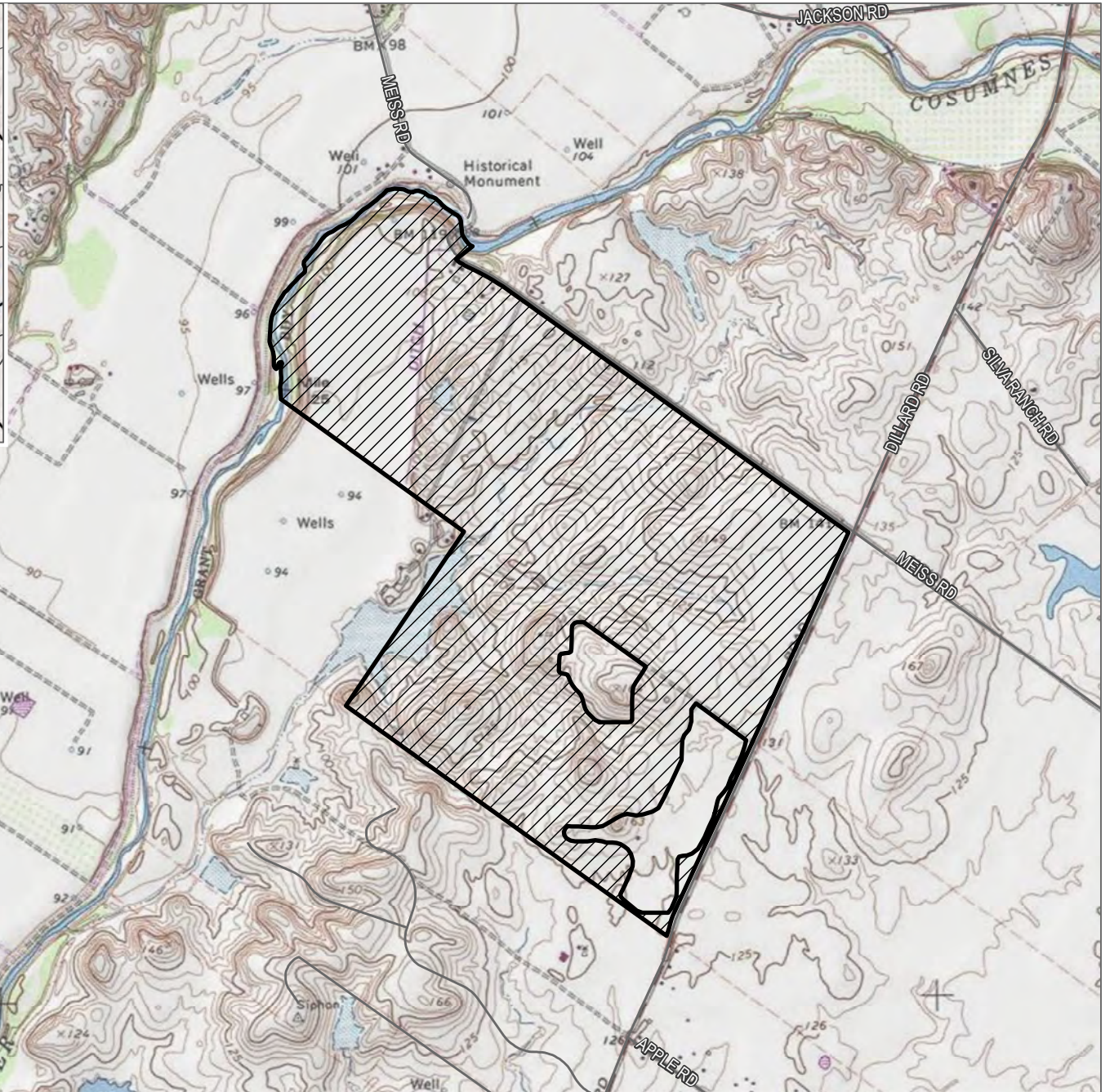
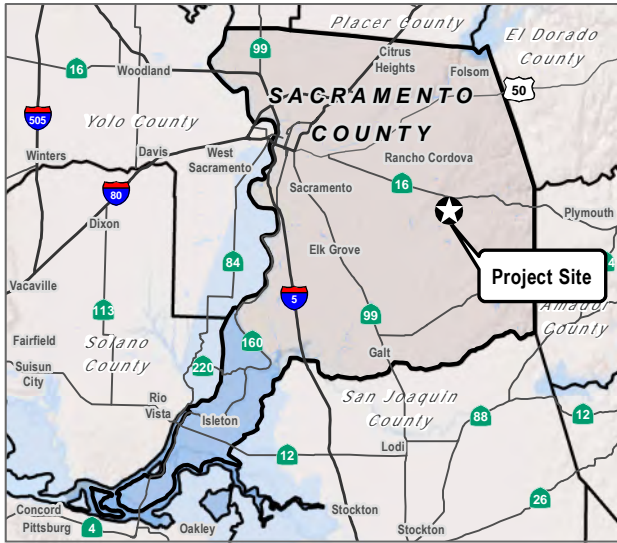



“We certify that the information in this survey report and attached exhibits fully and accurately represents our work.”

Brent P. Helm      Signature       Date 01-25-2021  
(TE-795930-10.2)

Sean M. O'Brien      Signature       Date 01-25-2021  
(TE-795930-10.2)





 Survey Area Boundary (741.20 acres)

SOURCE: USGS 7.5-Minute Series Sloughouse Quadrangle

**DUDEK**



0 1,000 2,000  
Feet  
1:24,000  
NAD1983, CA State Plane Zone II

**FIGURE 1**

**Project Location Map**

Sloughouse Project (Category: Other) - USFWS Listed Large Branchiopod Survey Notification, City of Sloughouse, Sacramento County



## METHODS

Methods followed U.S. Fish and Wildlife Service's (USFWS 2017) *Survey Guidelines for Listed Large Branchiopods* for dry-season sampling and consisted of first soil collection and then soil processing and analysis as described below.

### SOIL COLLECTION

Dry soils were collected on October 13-16, 19-22, November 11, 2020 by Heather Moine of Dudek as authorized by USFWS under permit numbers TE-60147A-1 of Section 10(a)(1)(A) of the federal Endangered Species Act (ESA), 16 U.S.C. 1531 et seq., and its implementing regulations (Appendix A). Heather Moine was supported by Laura Burris, Allie Sennett, Anna Godhino, Paul Lemons (USFWS permit # TE-051248-6), and Emily Scricca.

A small 6-inch hand trowel was used to excavate ten samples (approximately 100 milliliter each) of dry soil from the bottom of each seasonal feature. Soil samples were collected equidistantly along two perpendicular transects (lengthwise [transect A] and widthwise [transect B]), incorporating the deepest region of the seasonal feature. If neither transect passed within the second deepest region of the seasonal feature, another soil sample was taken to specifically include it; however, no more than ten soils samples were extracted from a set of perpendicular transects.

Dry season surveys were conducted prior to the completion of the U.S. Army Corps of Engineers (USACE)-level aquatic resources delineation to meet overarching Project schedules. As such, some aquatic resource features were not sampled because they were not identified as an aquatic resource during the delineation process and/or they were not considered federally-listed large branchiopod habitat.

The collected soils were delivered to HBC for subsequent processing and analysis as described below.

### SOIL PROCESSING AND ANALYSIS

Soil samples obtained from Dudek were processed and analyzed by Dr. Brent Helm of HBC as authorized by the USFWS under recovery permit number TE-795930-10.2 of Section 10(a)(1)(A) of the federal ESA, 16 U.S.C. 1531 et seq., and its implementing regulations (Appendix A). In HBC's laboratory, a brine solution was prepared by mixing table salt (NaCl) with lukewarm tap water in a large container. The collected soil material was placed in the brine solution. The soil material was then gently worked by hand to breakdown any persistent soil structure. The organic material rising to the top of the brine solution was skimmed off and placed in a 600-micron diameter pore-size sieve stacked atop a 75-micron diameter pore-size sieve. The soil material was processed through the top sieve by flushing it with lukewarm tap water



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while gently rubbing it with a soft-bristle brush. The soil retained from the 75-micron diameter pore size sieve was then removed and thinly ( $\approx 1.0$  mm) spread into plastic petri dishes.

The contents of each petri dish were examined under a 10 to 252-power zoom binocular microscope. A minimum of 0.5-hour was spent searching the contents of each petri dish for large branchiopod cysts (embryonic eggs). Dr. Helm's large branchiopod cyst reference collection and scanning electron micrographs of cysts (Belk 1989, Brendock *et al.* 2008, Gilchrist 1978, Hill and Shepard 1998, Mura 1991, and Rabet 2010) were used to identify and compare any cysts observed within the soil samples. This processing method (described above) favors the detection of cysts belonging to the genera *Branchinecta*, *Lepidurus*, and *Streptocephalus* since these three genera have species that are federally listed. Evidence of other aquatic macroinvertebrates encountered was also noted on the laboratory data sheet.

## RESULTS

### SOIL COLLECTION

Dudek collected soils from a total of 67 features within the Project (Exhibit A).

### SOIL PROCESSING AND ANALYSIS

All of the soils collected by Dudek were processed and analyzed for evidence of large branchiopods. No evidence of federally-listed large branchiopods (i.e., cysts belonging to the genus *Branchinecta* or *Lepidurus* or carapaces of *Lepidurus*) were observed in the soils collected (Table 1). However, cysts belonging to the non-listed California fairy shrimp (*Linderiella occidentalis*) were observed in the soils collected from six features (ID-01, P-02, SW-17, SW-18, SWS-07, and VP-15). Representative photographs of the aquatic resource features occurring at the Project are provided in Appendix B.

Table 1. Results of Dry-Season Sampling at the Proposed Sloughhouse Project

Feature ID	Invertebrates Present (X)							Abundance of <i>Linderiella occidentalis</i> Cysts
	Insects Exo-skeletons	Micro-turbellarian Cysts	Cladocera Ephyppia	Ostracod Cysts/ Carapaces	Hydracarina	Nematoda	Collembola	
D-01	X		X				X	
ED-02	X	X	X			X	X	
ED-05		X	X				X	
ID-01	X	X	X	X	X	X	X	Low
P-02	X	X	X	X		X	X	Low
SW-01	X						X	
SW-03	X	X				X	X	
SW-05						X	X	
SW-06	X	X				X	X	
SW-07	X	X	X				X	
SW-08	X					X	X	
SW-09	X					X	X	
SW-10	X					X	X	
SW-13	X	X				X	X	
SW-15	X	X	X	X	X		X	
SW-17	X	X	X	X		X	X	Low
SW-18	X	X				X	X	Low
SW-19	X	X	X	X	X	X	X	
SW-20	X	X	X	X		X	X	
SW-21		X				X	X	
SW-22	X		X	X		X	X	



Table 1. Results of Dry-Season Sampling at the Proposed Sloughhouse Project

Feature ID	Invertebrates Present (X)							Abundance of <i>Linderiella occidentalis</i> Cysts
	Insects Exo-skeletons	Micro-turbellarian Cysts	Cladocera Ehippia	Ostracod Cysts/ Carapaces	Hydracarina	Nematoda	Collembola	
SW-23	X	X				X	X	
SW-24	X	X			X	X	X	
SW-25	X		X			X	X	
SW-26	X	X				X	X	
SW-27	X	X				X	X	
SW-28	X	X	X			X	X	
SW-29	X	X	X	X		X	X	
SW-30	X	X	X			X	X	
SW-32	X					X	X	
SW-34	X	X	X	X		X		
SW-36	X					X	X	
SW-37		X	X	X		X	X	
SW-38	X	X				X	X	
SW-39			X					
SW-41	X	X				X	X	
SW-43	X	X	X			X	X	
SW-44	X	X	X			X	X	
SW-45	X	X	X	X			X	
SW-46	X	X	X	X		X	X	
SW-47	X	X	X			X	X	
SW-48	X	X	X			X	X	
SW-50						X	X	
SWS-02	X	X	X			X	X	
SWS-04	X	X	X	X	X	X	X	
SWS-05	X	X		X		X	X	
SWS-06	X						X	
SWS-07	X	X	X	X	X	X	X	Low
SWS-09	X	X				X	X	
SWS-10	X	X	X	X		X		
SWS-11		X	X			X	X	
SWS-40	X	X		X	X	X	X	
VP-01	X	X	X	X	X	X	X	
VP-02		X	X	X		X	X	
VP-03	X	X	X			X	X	
VP-04						X	X	
VP-05	X		X				X	
VP-06	X		X		X		X	
VP-07	X	X	X	X		X	X	
VP-09				X		X	X	
VP-10	X	X				X	X	

Table 1. Results of Dry-Season Sampling at the Proposed Sloughhouse Project

Feature ID	Invertebrates Present (X)							Abundance of <i>Lindieriella occidentalis</i> Cysts
	Insects Exo-skeletons	Micro-turbellarian Cysts	Cladocera Ehippia	Ostracod Cysts/ Carapaces	Hydracarina	Nematoda	Collembola	
VP-11	X	X	X			X	X	
VP-12	X	X	X	X	X	X	X	
VP-13	X	X	X	X		X	X	
VP-14	X	X	X	X		X	X	
VP-15	X	X	X	X	X	X	X	Low
VP-16	X	X	X	X		X	X	

\*Abundance categories are derived from USFWS's Survey Guidelines for the Listed Large Branchiopods - Section VI(d) (none = no cysts found in sample; low abundance = estimate of 1-10 cysts/100 ml soil; medium abundance = estimate of 11-50 cysts/100 ml soil; high abundance = estimate of more than 50 cysts/100 ml soil)

### LITERATURE CITED

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**EXHIBIT A.**  
**AQUATIC RESOURCES AT THE PROJECT**





- Project Study Area Boundary (741.20 Acres)
- 2-foot Contours
- Aquatic Resources**
- Wetlands (37.49 acres)**
- Freshwater Emergent Wetland (0.02 acre)
- Seasonal Wetland (14.16 acres)
- Vernal Pool (6.30 acres)
- Pond (17.01 acres)
- Waters (32.13 acres) (27,431 linear feet)**
- Ephemeral Drainage (1.11 acres) (3,432 linear feet)
- Intermittent Drainage (2.36 acres) (4,463 linear feet)
- Perennial Drainage (24.10 acres) (4,506 linear feet)
- Seasonal Wetland Swale (2.15 acre) (8,807 linear feet)
- Upland Swale (0.63 acre) (1,838 linear feet)
- Ditch (1.78 acres) (4,385 linear feet)



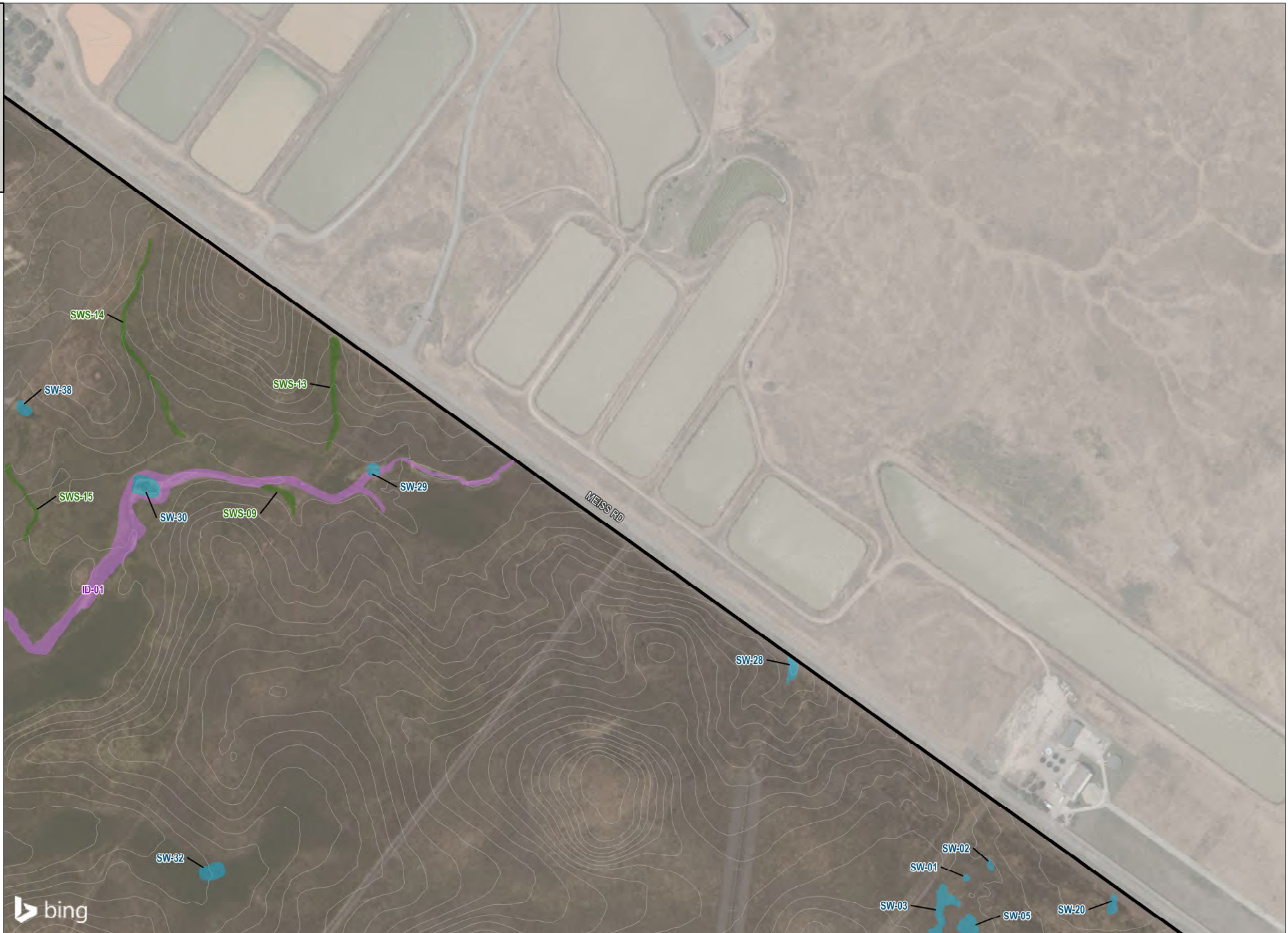
SOURCE: Bing Maps 2020, Sacramento 2019







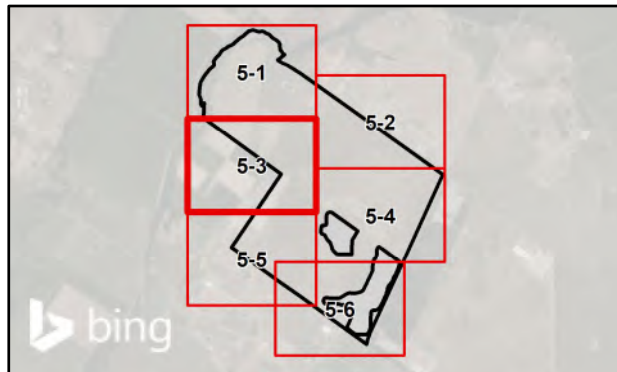
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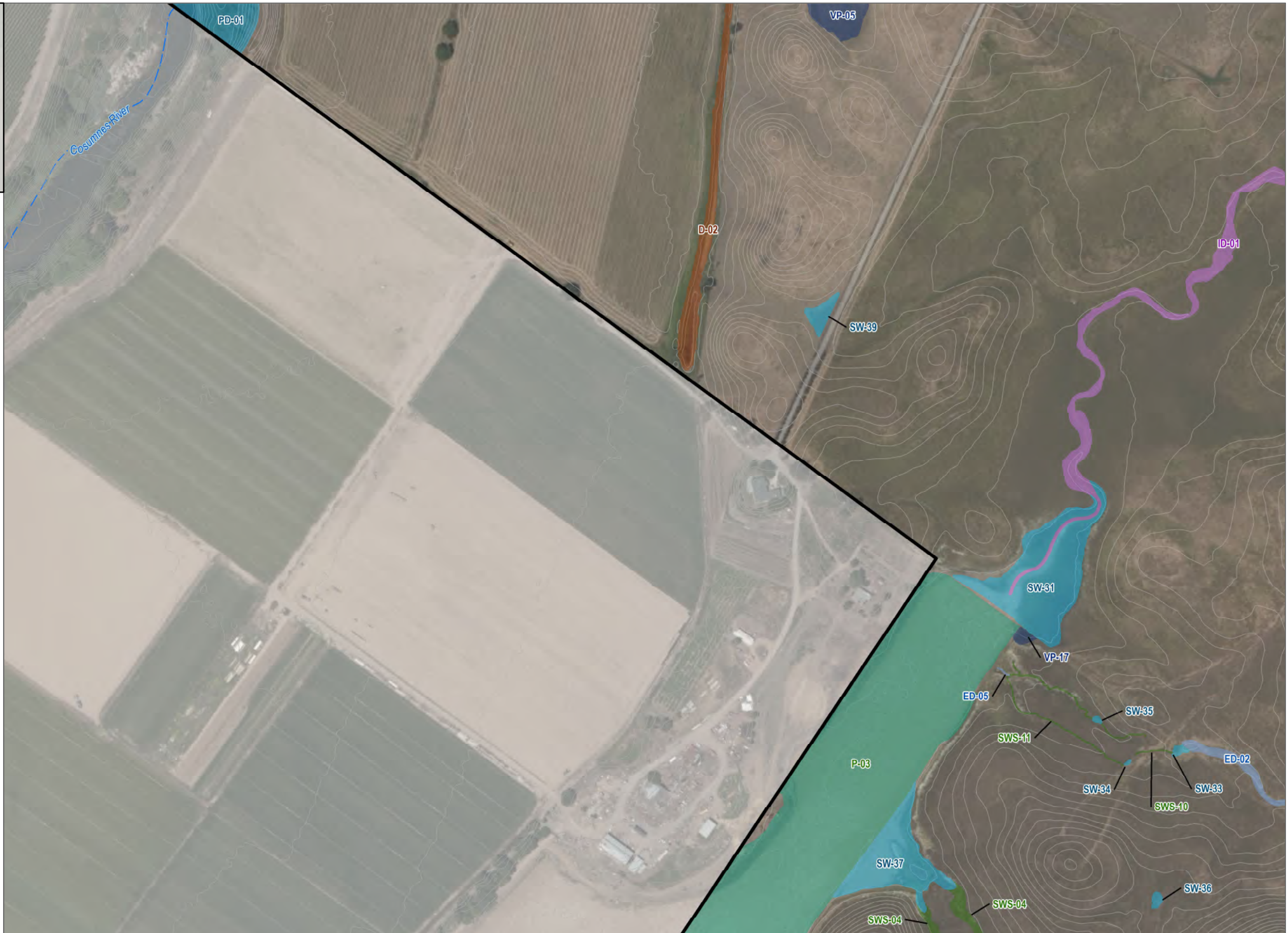
SOURCE: Bing Maps 2020, Sacramento 2019







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SOURCE: Bing Maps 2020, Sacramento 2019







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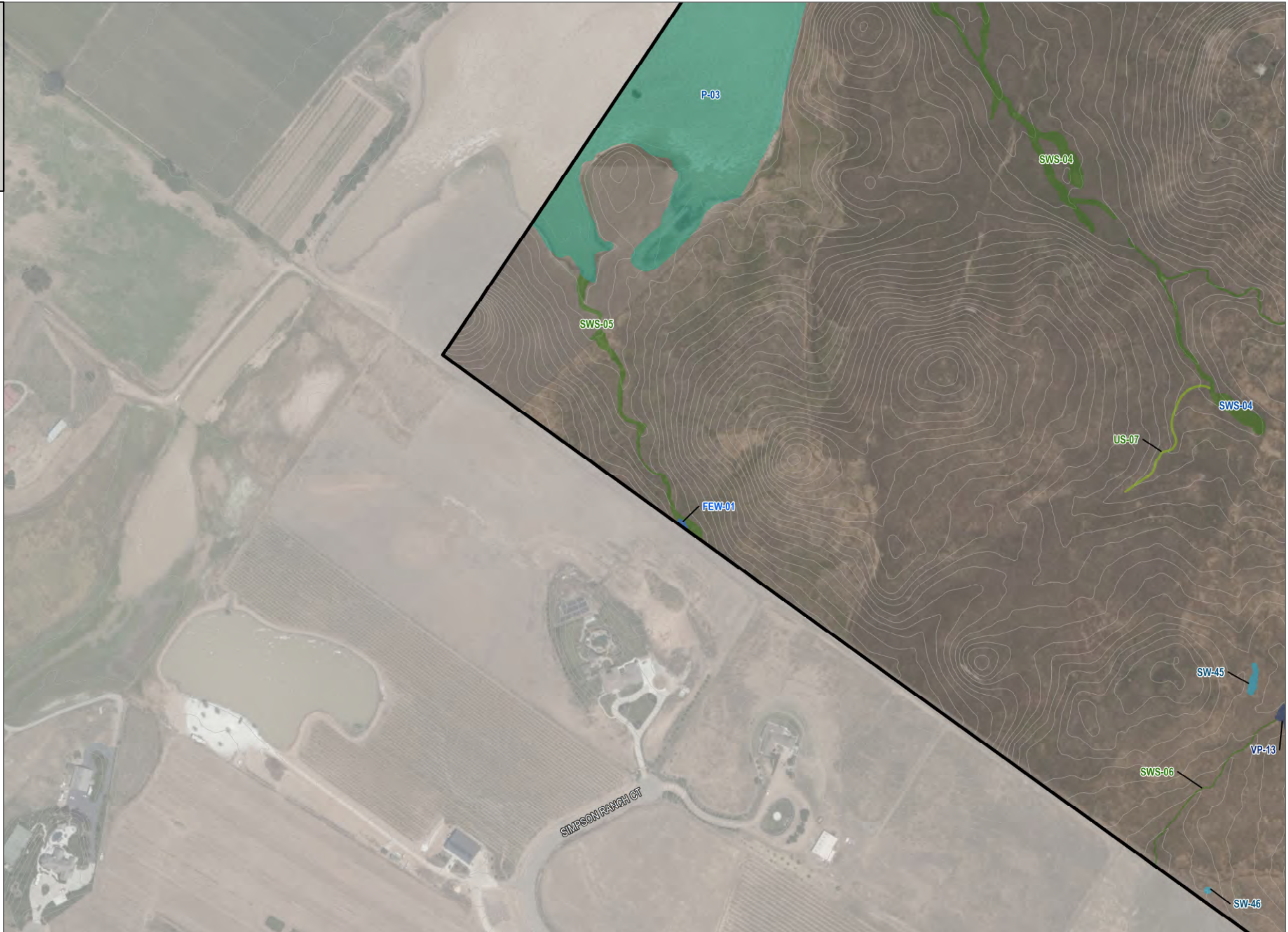
SOURCE: Bing Maps 2020, Sacramento 2019







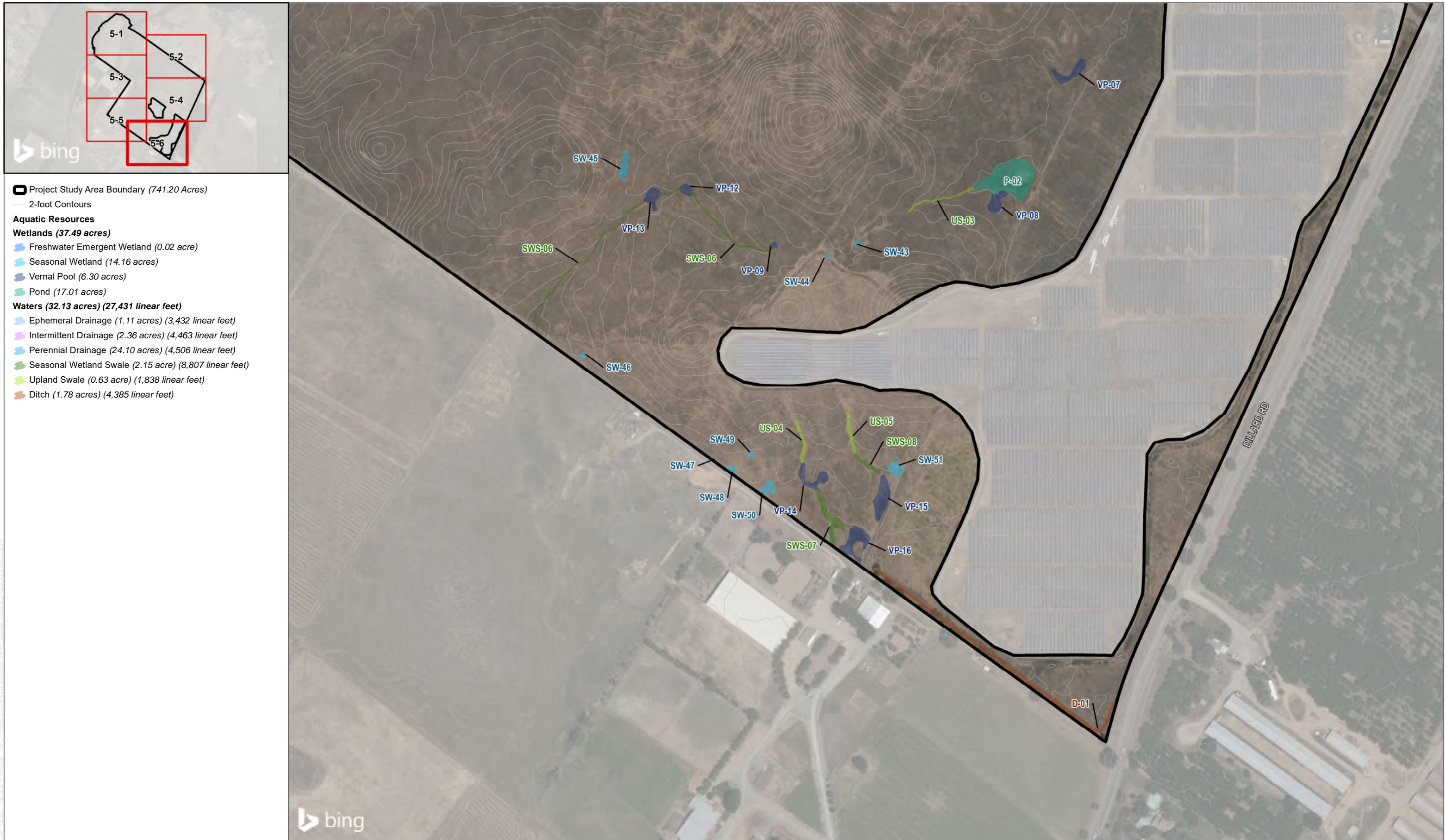
- Project Study Area Boundary (741.20 Acres)
- 2-foot Contours
- Aquatic Resources**
- Wetlands (37.49 acres)**
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SOURCE: Bing Maps 2020, Sacramento 2019







- Project Study Area Boundary (741.20 Acres)
- 2-foot Contours
- Aquatic Resources**
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- Ditch (1.78 acres) (4,385 linear feet)

SOURCE: Bing Maps 2020, Sacramento 2019





**APPENDIX A.**  
**USFWS AUTHORIZATION**



**From:** [Lantz, Samantha M](#)  
**Sent:** Tuesday, September 29, 2020 10:23 AM  
**To:** [Morgan Kennedy](#)  
**Cc:** [David Hochart](#); [Michael Henry](#); [Perkins-Taylor, Ian](#) E  
**Subject:** Re: [EXTERNAL] FW: USFWS Survey Request For Large Listed Branchiopods (Sacramento County)

---

You may consider this email authorization to conduct wet season and dry season surveys for large listed branchiopods in the proposed Sloughhouse Project survey area in Sacramento County, per the conditions of the relevant recovery permits (TE-53771B; TE-031848; TE-051248; TE-60147A; TE-813545) and as specified in your email request dated September 28, 2020.

Remember to carry a copy of your permit(s) while doing the work and to follow the terms and conditions of the permit(s), including the reporting requirements. In your report(s), please include which activities were authorized, the names of all persons involved in each activity, their recovery permit numbers, if applicable, and the date of this authorization, to help ensure that we correctly record the fulfillment of the reporting requirement under this authorization. We ask that you use UTM coordinates for all spatial data. Please use **Service reference number 2020-TA-3007** and send reports to me and Ian Perkins-Taylor (biologist in our Sac Valley division) (cced here).

Best,

Sam

~~~~~

Samantha Lantz, PhD  
Fish and Wildlife Biologist  
USFWS, Sacramento Field Office  
Listing and Recovery Division  
2800 Cottage Way W-2605  
Sacramento, CA 95825-1888  
Phone: 916-414-6526  
Pronouns: she/her/hers

In an effort to slow the spread of the coronavirus (COVID-19), staff in the Sacramento Fish and Wildlife Office have implemented an aggressive telework schedule. At this time, we are responding to requests for information via email or phone as often as possible as we do not have the in-office capacity to support regular mail service. We appreciate your understanding.

---

**From:** Morgan Kennedy <mkennedy@dudek.com>  
**Sent:** Tuesday, September 29, 2020 9:41 AM  
**To:** Lantz, Samantha M <samantha\_lantz@fws.gov>  
**Cc:** David Hochart <dhochart@dudek.com>; Michael Henry <mhenry@dudek.com>; Paul Lemons <plemons@dudek.com>  
**Subject:** RE: [EXTERNAL] FW: USFWS Survey Request For Large Listed Branchiopods (Sacramento County)

Good Morning Samantha,

Yes, please move forward with processing the request for surveys, excluding Paul Lemons.





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**APPENDIX B.**  
**REPRESENTATIVE PHOTOGRAPHS**

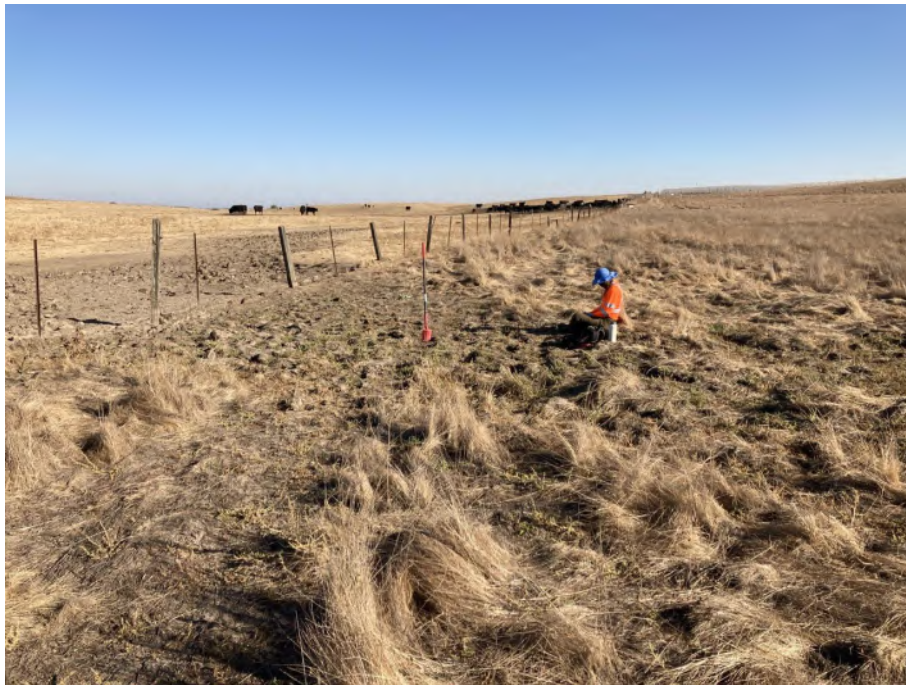


Photo 1: Freshwater Emergent Wetland (FEW)-01.



Photo 2: Representative photo of a seasonal wetland (SW-03) on site.





**Photo 3:** Another representative photo of a seasonal wetland (SW-33) on site.



**Photo 4:** Representative photo of a pond (Pond-01) on site.





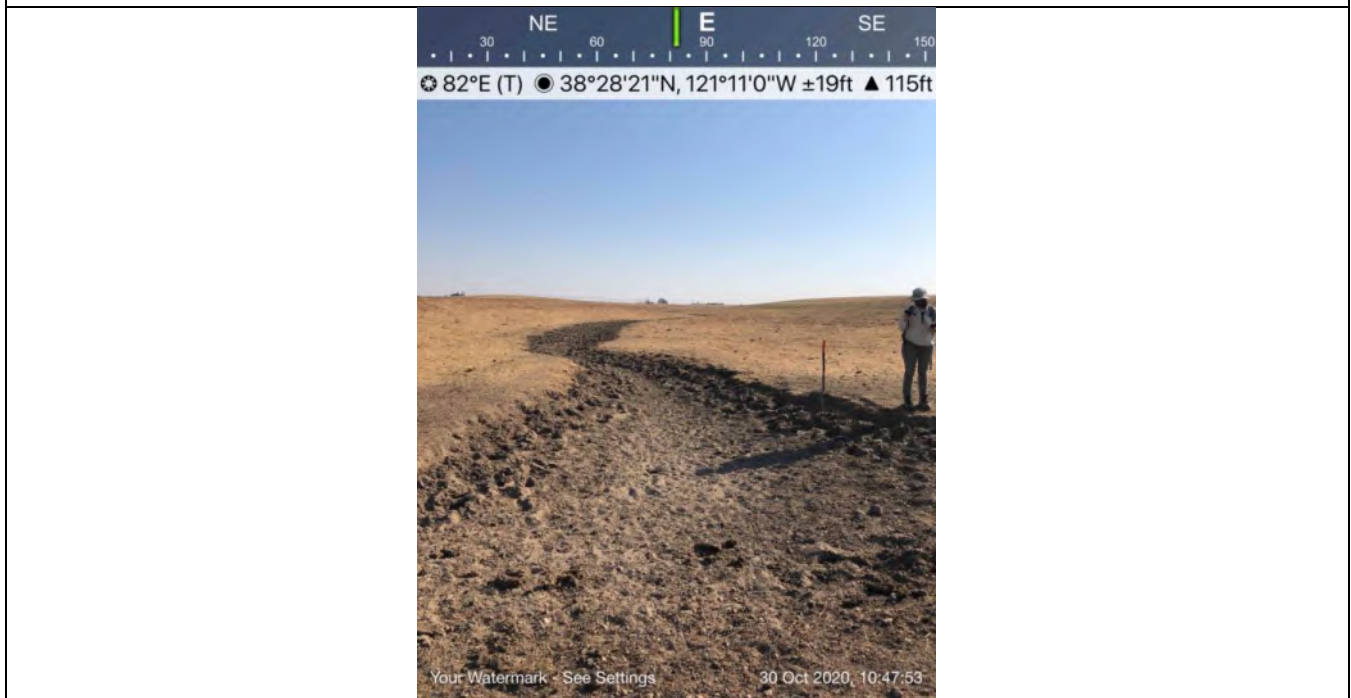
Photo 5: Pond-03 (pictured) was actively being graded during the October/November field surveys.



Photo 6: Representative photo of a vernal pool (VP-07) on site showing the concentric rings of hydrophytic vegetation.



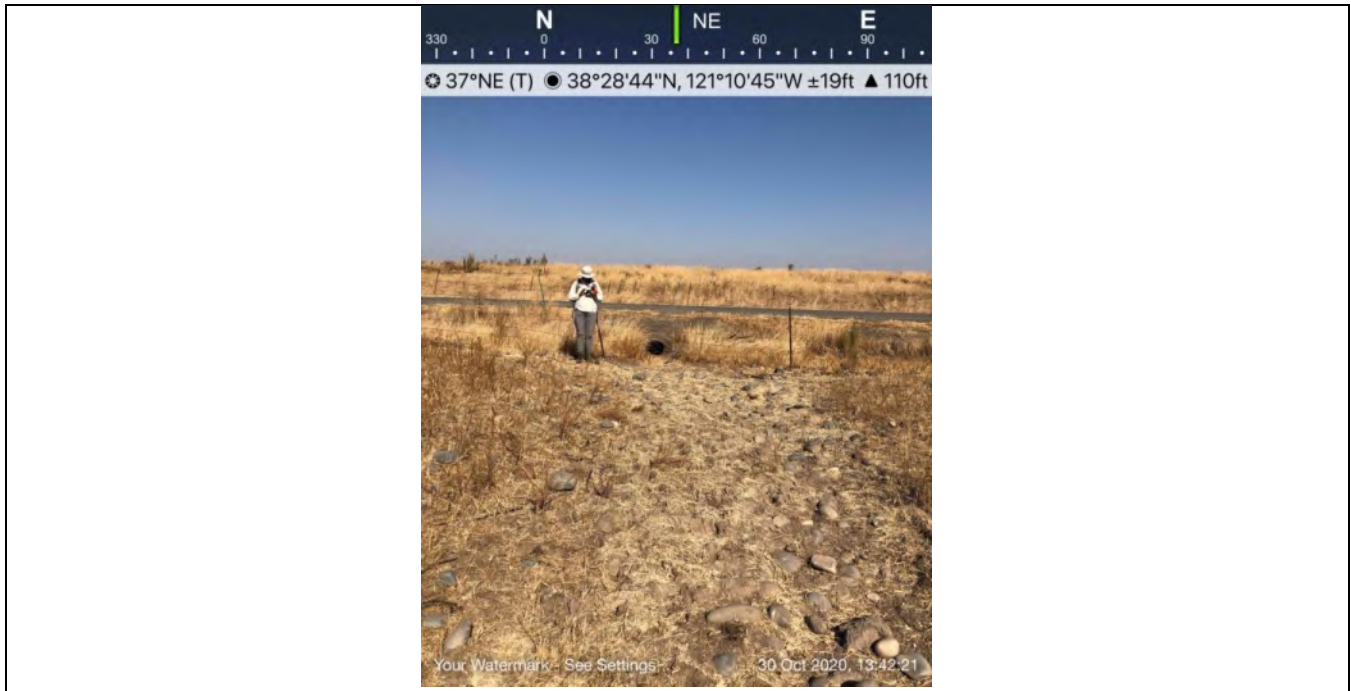
**Photo 7:** Representative photo of Ditch-02, which was inundated at the time of the October/November field survey and contained mostly upland vegetation.



**Photo 8:** Representative photo of an ephemeral drainage (ED-02) on site.



APPENDIX A  
PHOTO LOG



**Photo 9:** The intermittent drainage (ID-01) on site at its intersection with Meiss Road.



**Photo 10:** A portion of the Cosumnes River (Perennial Drainage-01) flows within the western boundary of the project site.





**Photo 11:** Representative photo of a seasonal wetland swale (SWS-06) on site.



**Photo 12:** Representative photo of an upland swale (US-04) on site.

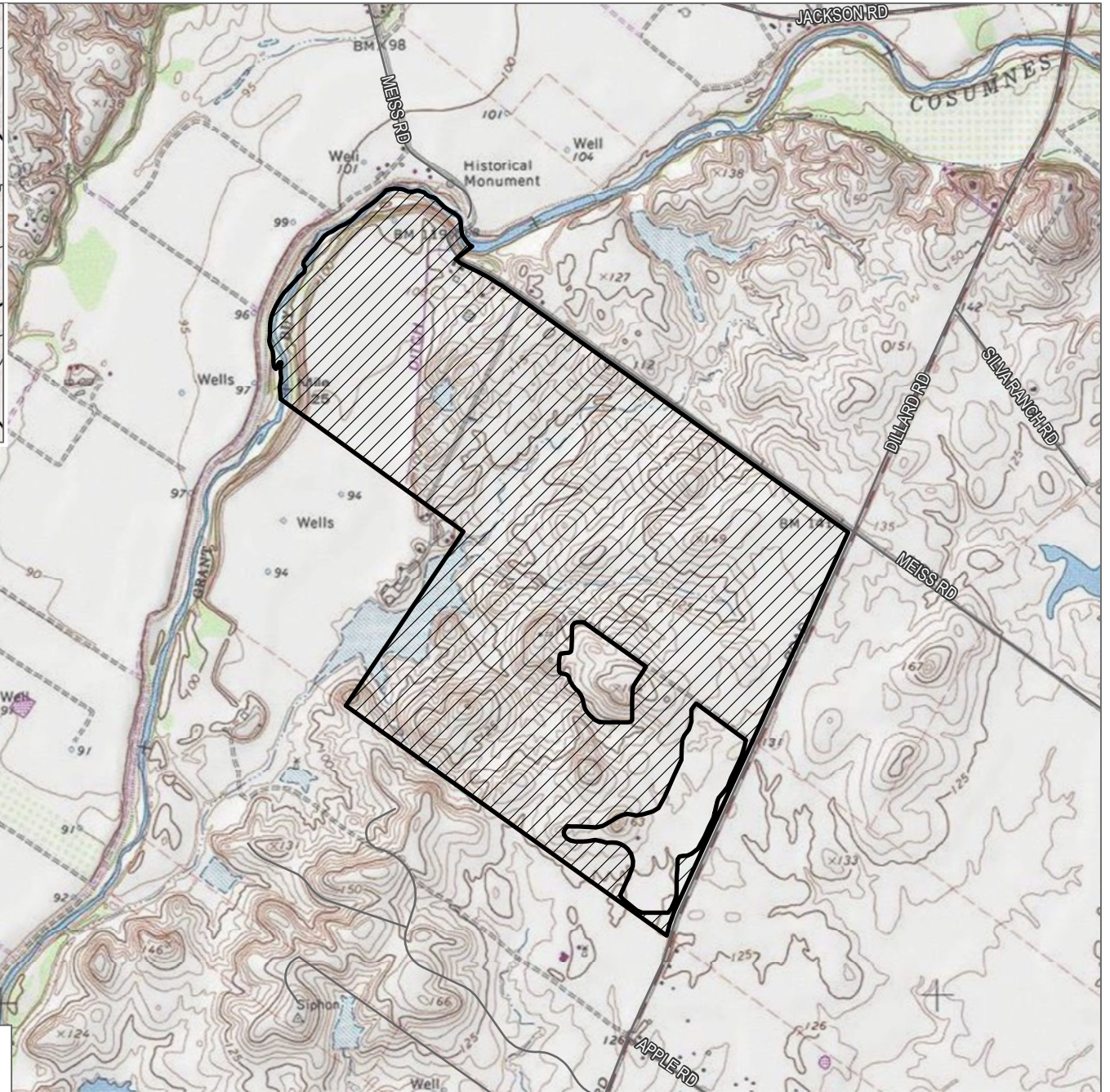
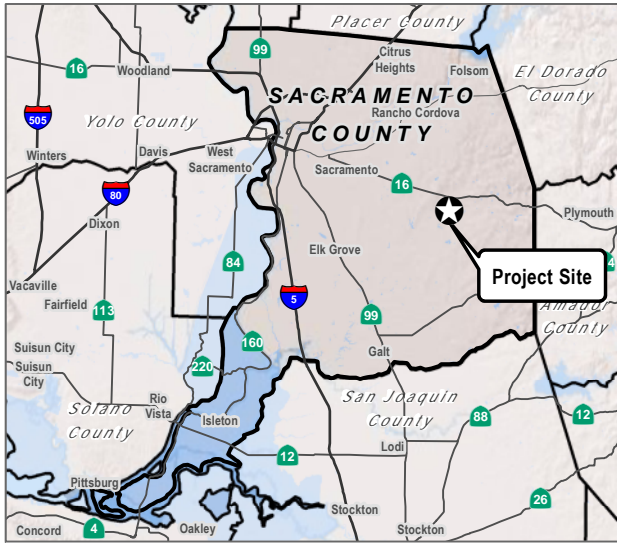


# Attachment C

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Figure 1- Project Location





 Project Study Area Boundary (741.20 acres)

SOURCE: USGS 7.5-Minute Series Sloughouse Quadrangle

**DUDEK**



0 1,000 2,000 Feet  
1:24,000  
NAD1983, CA State Plane Zone II

**FIGURE 1**

**Project Location Map**

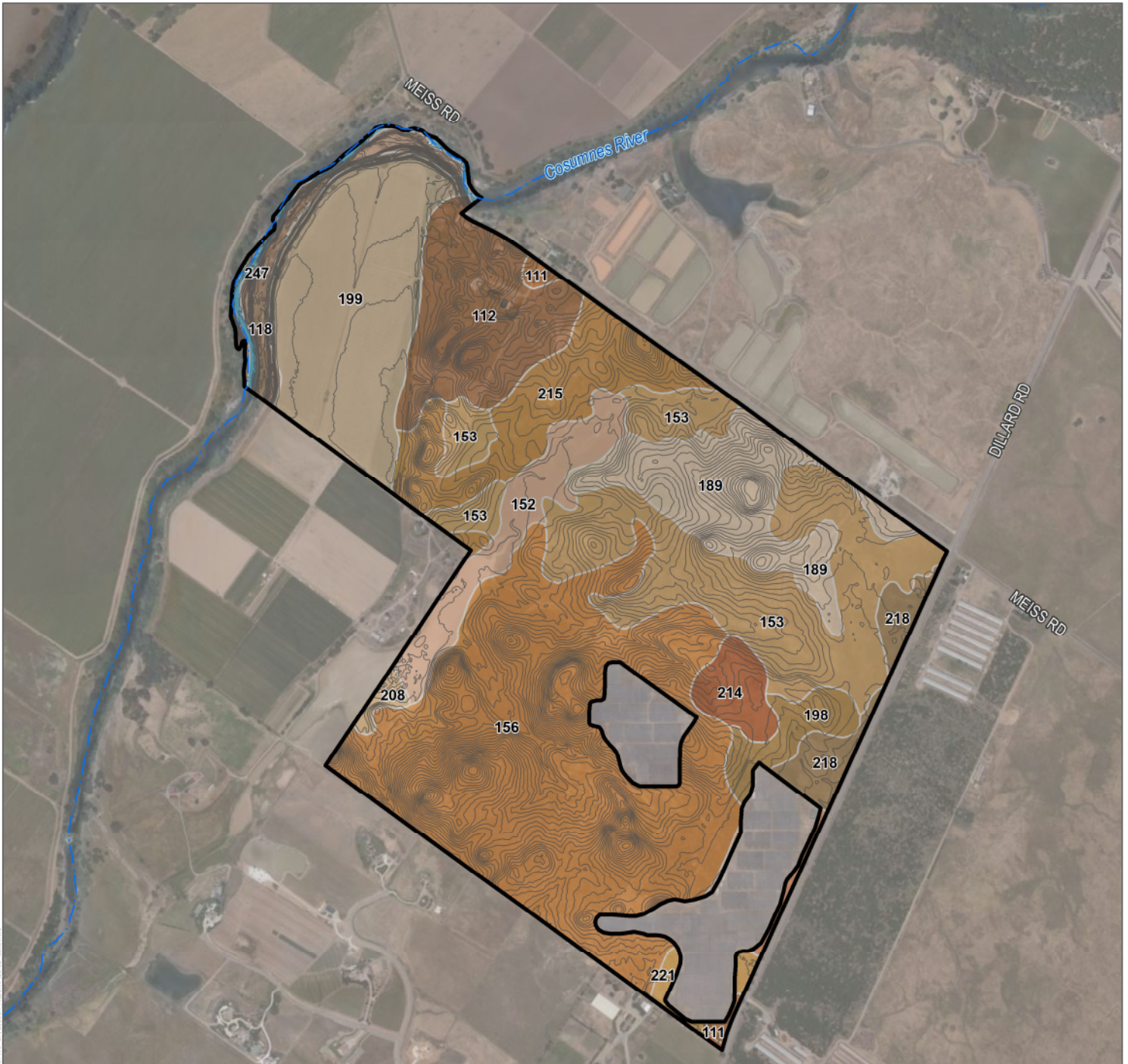




# Attachment D

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Figure 2- Project Soils



Project Study Area Boundary (741.20 acres)

NHD Flowline

2-foot Contours

**Soil Classification**

- 111 : Bruella sandy loam, 0 - 2% slopes
- 112 : Bruella sandy loam, 2 to 5 percent slopes
- 118 : Columbia sandy loam, drained, 0 - 2% slopes, occasionally flooded
- 152 : Galt clay, 0 - 2% slopes
- 153 : Galt clay, 2 - 5% slopes
- 156 : Hadselville-Pentz complex, 2 - 30% slopes
- 189 : Peters clay, 1 - 8% slopes

- 198 : Redding gravelly loam, 0 - 8% slopes
- 199 : Reiff fine sandy loam, 0 - 2% slopes, occasionally flooded
- 208 : Sailboat silt loam, drained, 0 - 2% slopes, occasionally flooded
- 214 : San Joaquin silt loam, 0 - 3% slopes
- 215 : San Joaquin silt loam, 3 - 8% slopes
- 216 : San Joaquin-Durixeralfs complex, 0 - 1% slopes
- 217 : San Joaquin-Galt complex, leveled, 0 - 1% slopes
- 218 : San Joaquin-Galt complex, 0 - 3% slopes
- 221 : San Joaquin-Xerarents complex, leveled, 0 - 1% slopes
- 247 : Water

SOURCE: Bing Maps 2020, Sacramento County 2019, USDA 2019



**FIGURE 2**  
Project Soils

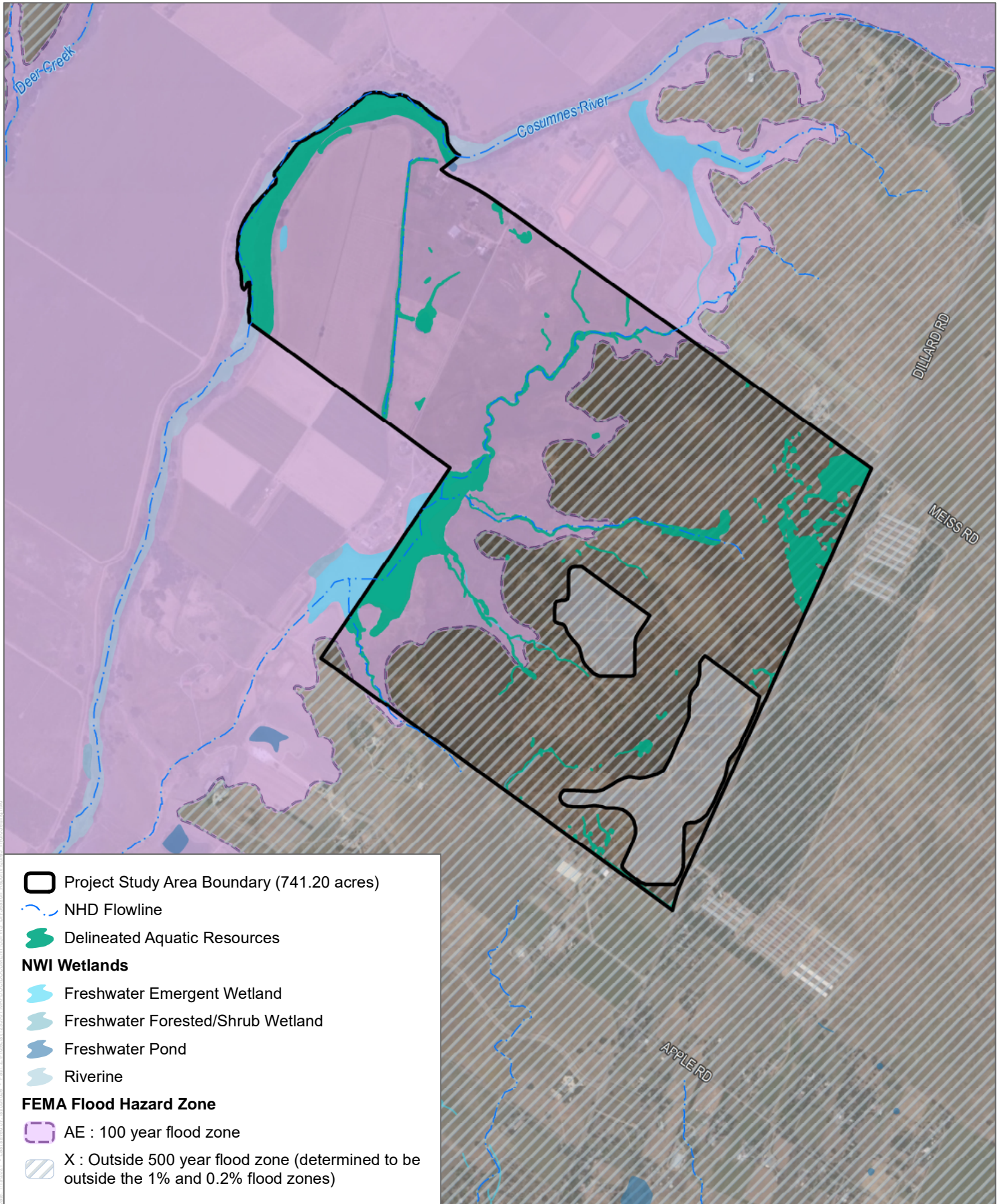


# Attachment E

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Figure 3- Project Hydrology





SOURCE: Bing Maps 2020, NHD 2019, Sacramento County 2019, USFWS 2020, FEMA 2019



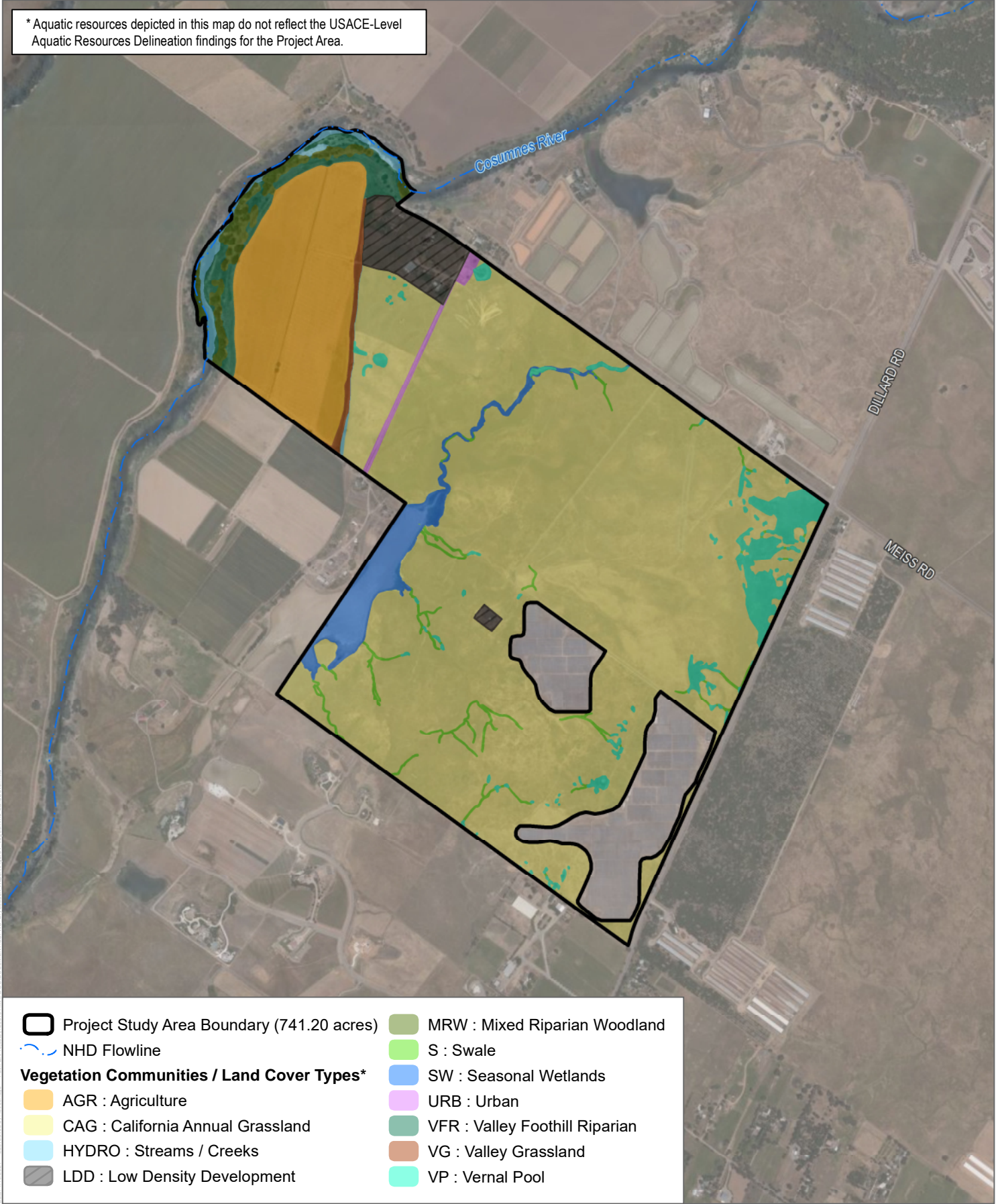
# Attachment F

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Figure 4- Project Vegetation Communities and Land Cover



\* Aquatic resources depicted in this map do not reflect the USACE-Level Aquatic Resources Delineation findings for the Project Area.



- Project Study Area Boundary (741.20 acres)
- NHD Flowline
- Vegetation Communities / Land Cover Types\***
- AGR : Agriculture
- CAG : California Annual Grassland
- HYDRO : Streams / Creeks
- LDD : Low Density Development
- MRW : Mixed Riparian Woodland
- S : Swale
- SW : Seasonal Wetlands
- URB : Urban
- VFR : Valley Foothill Riparian
- VG : Valley Grassland
- VP : Vernal Pool

SOURCE: Bing Maps 2020, Sacramento County 2019, SSHCP 2014



0 750 1,500 Feet

**FIGURE 4**

**Project Vegetation Communities and Land Cover**

Sloughhouse Solar Project (Category: Other) - USFWS Dry Season Survey Report, Sacramento County, CA



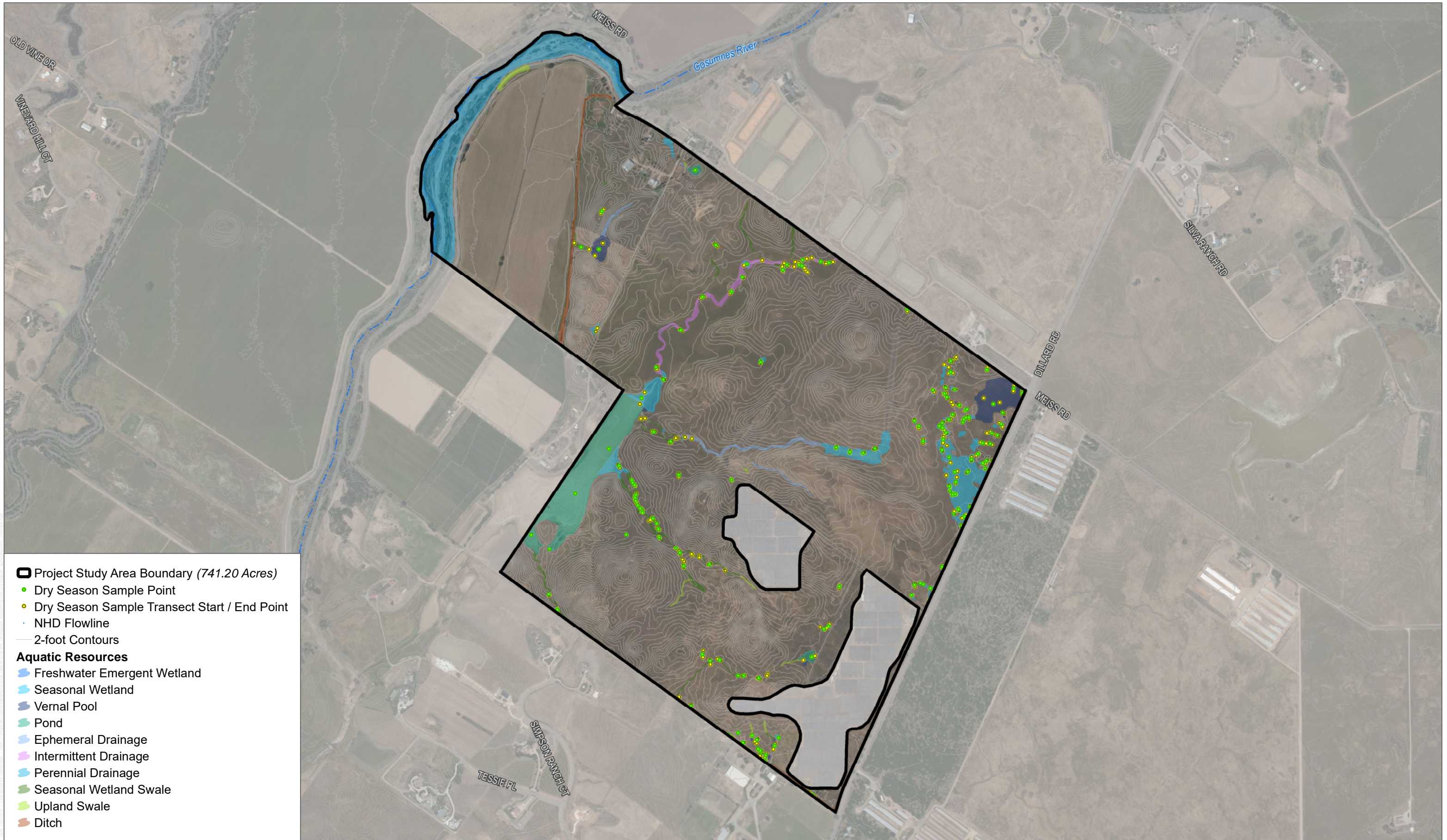


# Attachment G

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Figure 5- USFWS Dry Season Protocol Surveys Results for Federally Listed Branchiopods





SOURCE: Bing Maps 2020, Sacramento County 2019

**FIGURE 5**





SOURCE: Bing Maps 2020, Sacramento County 2019

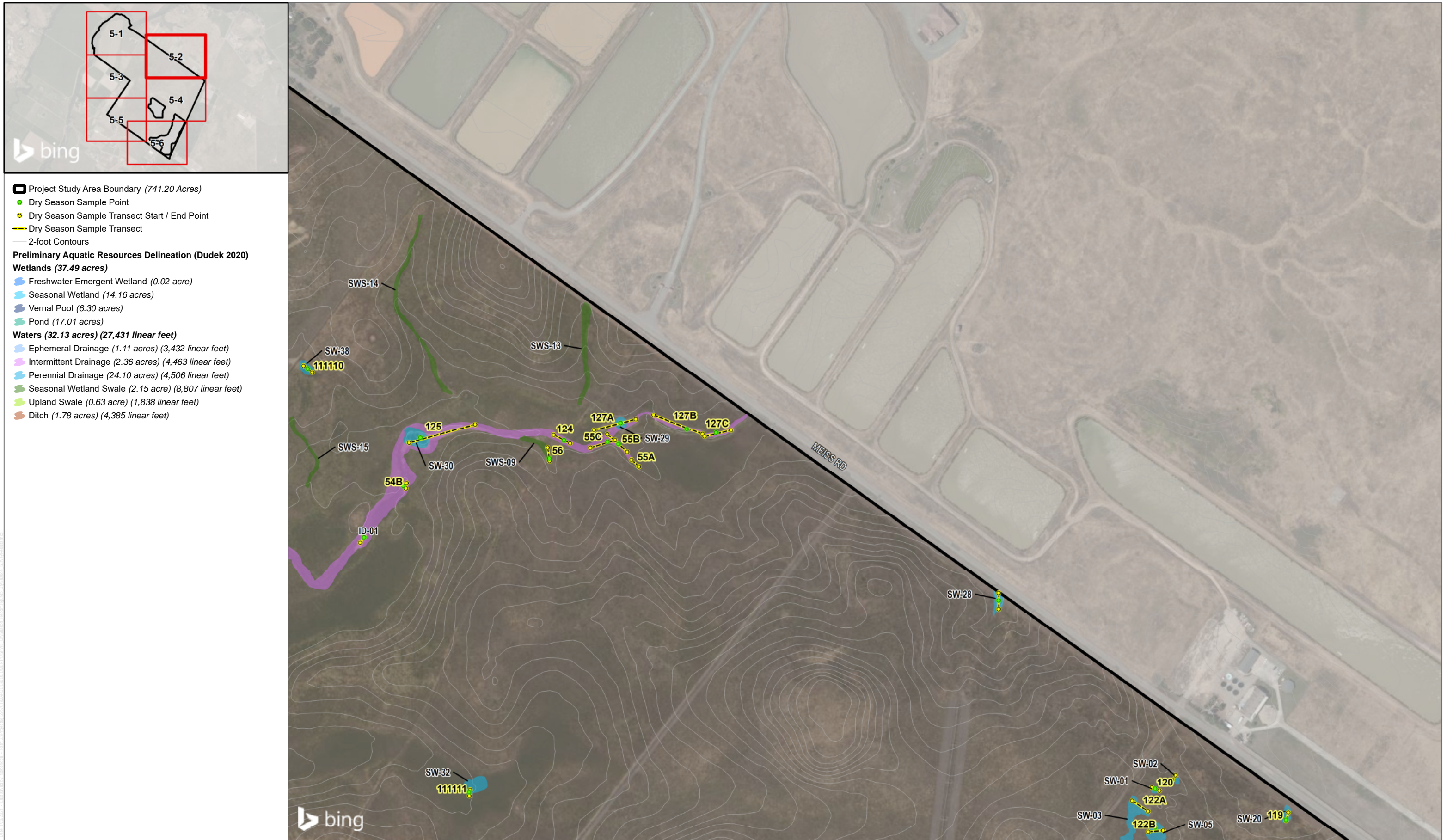


FIGURE 5-1

USFWS Dry Season Protocol Survey Results for Federally Listed Branchiopods

Sloughhouse Solar Project (Category: Other) - USFWS Dry Season Survey Report, Sacramento County, CA





SOURCE: Bing Maps 2020, Sacramento County 2019



FIGURE 5-2

USFWS Dry Season Protocol Survey Results for Federally Listed Branchiopods

Sloughhouse Solar Project (Category: Other) - USFWS Dry Season Survey Report, Sacramento County, CA



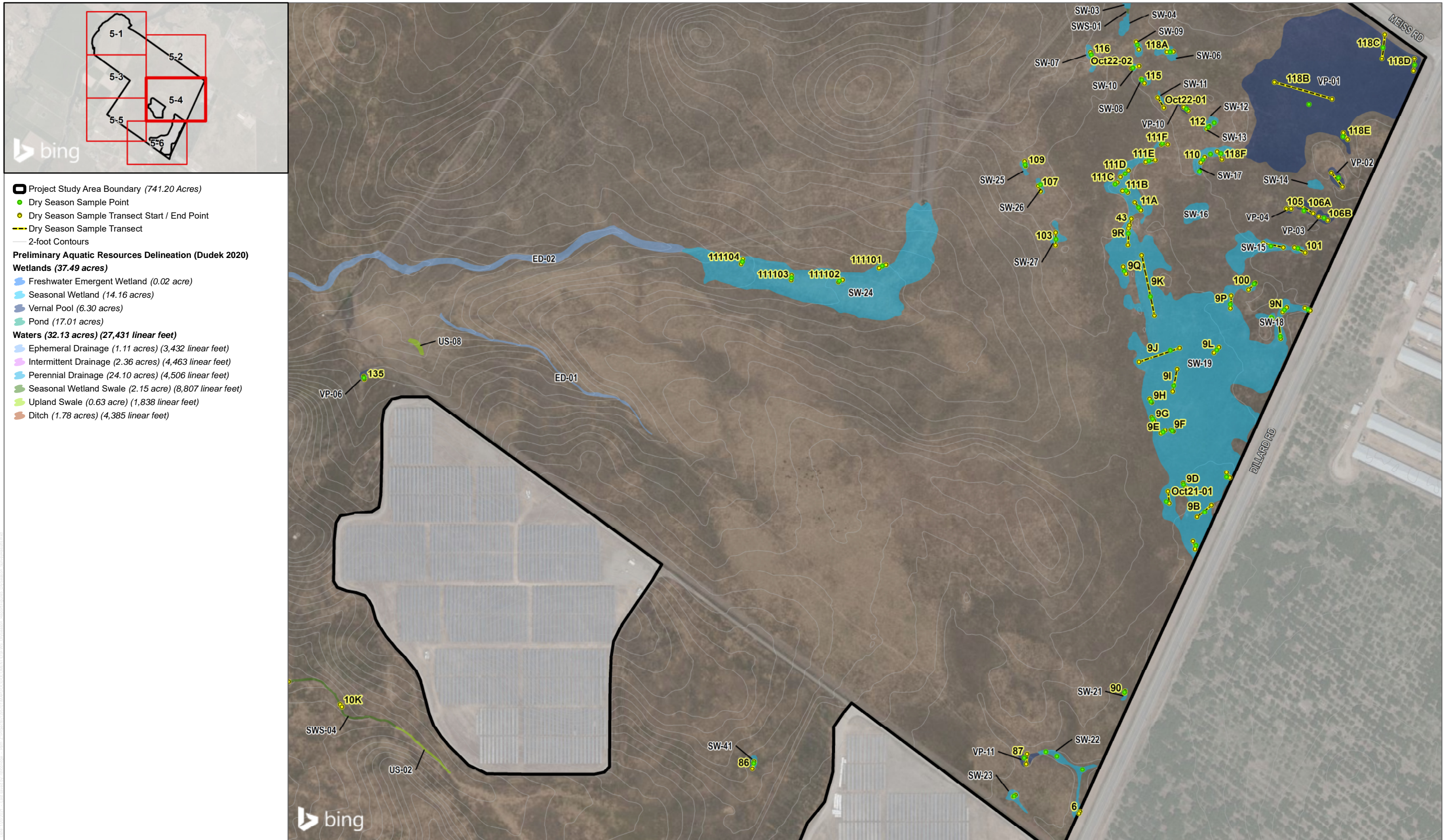


SOURCE: Bing Maps 2020, Sacramento County 2019



**FIGURE 5-3**  
 USFWS Dry Season Protocol Survey Results for Federally Listed Branchiopods  
 Sloughhouse Solar Project (Category: Other) - USFWS Dry Season Survey Report, Sacramento County, CA





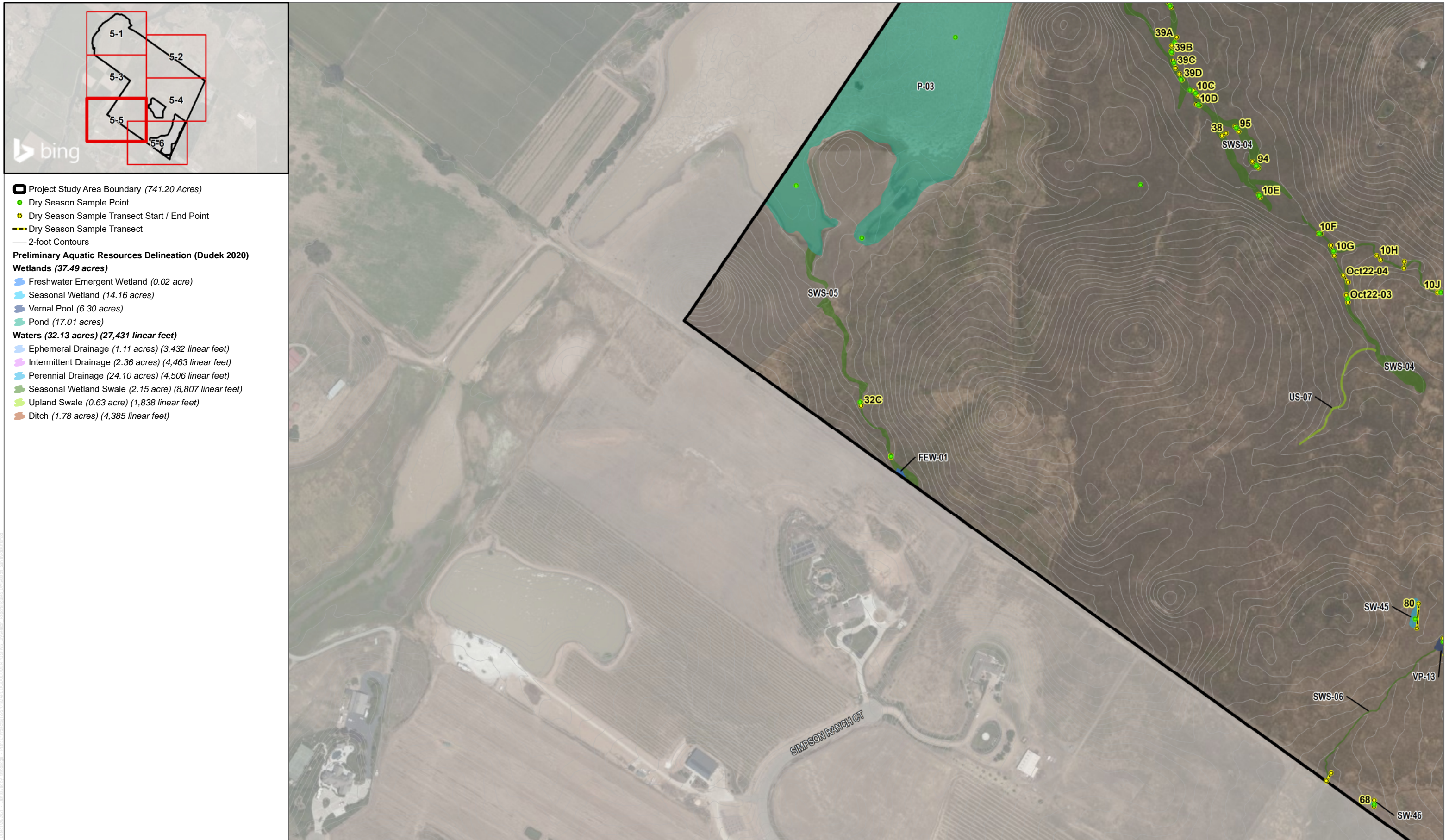
SOURCE: Bing Maps 2020, Sacramento County 2019

**FIGURE 5-4**

**USFWS Dry Season Protocol Survey Results for Federally Listed Branchiopods**

Sloughhouse Solar Project (Category: Other) - USFWS Dry Season Survey Report, Sacramento County, CA





SOURCE: Bing Maps 2020, Sacramento County 2019

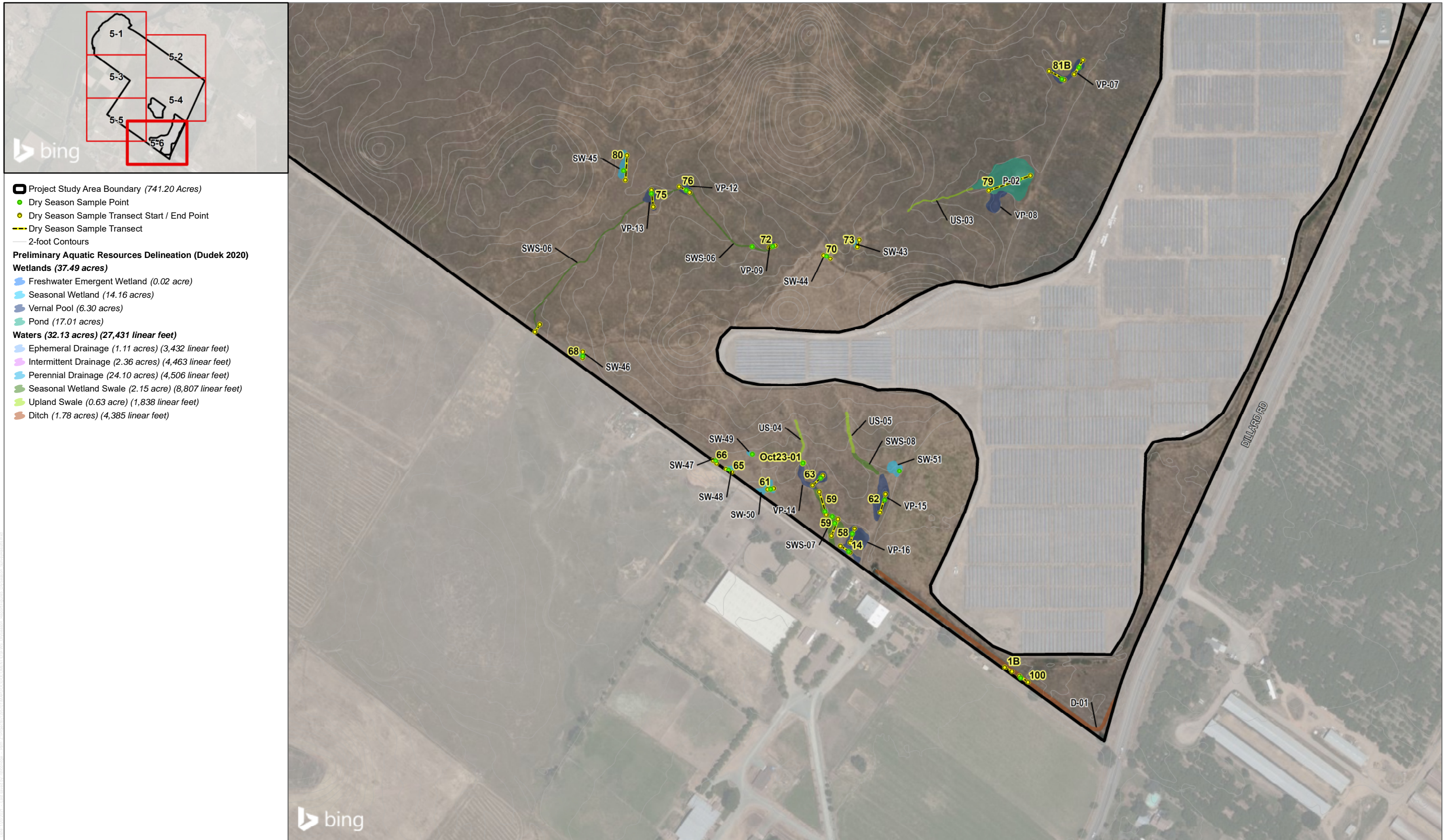


FIGURE 5-5

USFWS Dry Season Protocol Survey Results for Federally Listed Branchiopods

Sloughhouse Solar Project (Category: Other) - USFWS Dry Season Survey Report, Sacramento County, CA





SOURCE: Bing Maps 2020, Sacramento County 2019





# Attachment H

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Photo Record



APPENDIX H  
PHOTO RECORD



Photo 1: Representative photo of freshwater emergent wetland in the Project site.



Photo 2: Representative photo of a seasonal wetland in the Project site.





Photo 3: Representative photo of dry season soil sample transect layout.



Photo 4: Representative photo of a pond in the Project site.





Photo 5: Representative photo of a linear aquatic feature soil sample transect.



Photo 6: Representative photo of a vernal pool in the Project site.



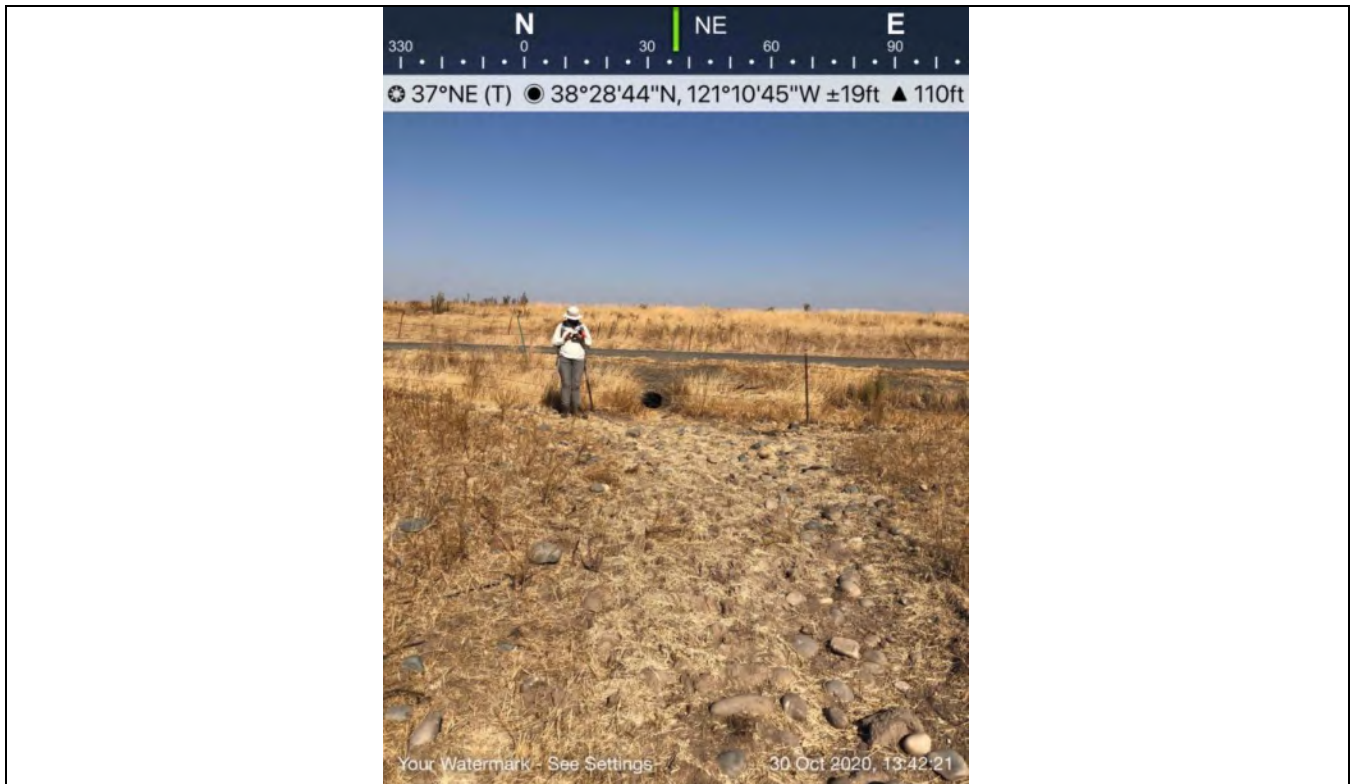


Photo 7: Representative photo of an agricultural ditch in the Project site.



Photo 8: Representative photo of an ephemeral drainage in the Project site.

APPENDIX H  
PHOTO RECORD



**Photo 9:** Representative photo of an intermittent drainage in the Project site.



**Photo 10:** A portion of the Cosumnes River within the western boundary of the Project site.





**Photo 11:** Representative photo of a seasonal wetland swale in the Project site.



**Photo 12:** Representative photo of an upland swale in the Project site.

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## **Appendix E**

USFWS Wet Season Protocol Survey Letter Report for  
Federally Listed Branchiopods, Sloughouse Solar  
Project, Sacramento County, California  
(USFWS#2020-TA-3007)

July 28, 2021

12957

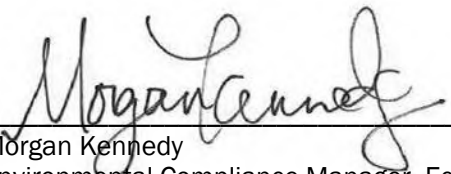
Samantha Lantz and Ian Perkins-Taylor  
USFWS, Sacramento Field Office  
Listing and Recovery Division  
2800 Cottage Way W-2605  
Sacramento, CA 95825-1888

**Subject:** *U.S. Fish and Wildlife Service Wet Season Protocol Survey Letter Report for Federally Listed Branchiopods, Sloughhouse Solar Project, Sacramento County, California (USFWS#2020-TA-3007)*

Dear Ms. Lantz and Mr. Perkins-Taylor:

This U.S. Fish and Wildlife Service (USFWS) Wet Season Protocol Survey Letter Report (Report) for federally listed branchiopods has been prepared in accordance with the USFWS *Survey Guidelines for the Listed Large Branchiopods*<sup>1</sup> and to fulfill reporting requirements in accordance with the 10(a)(1)(A) permit holder's recovery permit. This Report provides a complete overview of the wet season surveys conducted for the Sloughhouse Solar Project (Project). If you have any questions regarding this Report, or need any additional information, please feel free to call or email me at (916) 661-2498, mkennedy@dudek.com.

Sincerely,



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Morgan Kennedy  
Environmental Compliance Manager, Ecologist

- Att.: A) USFWS Wet Season Survey Request and Authorization.  
B) Figure 1- Project Location  
C) Figure 2- Project Soils  
D) Figure 3- Project Hydrology  
E) Figure 4- Project Vegetation Communities and Land Cover  
F) Figure 5- USFWS Wet Season Protocol Survey Results for Federally Listed Branchiopods  
G) Photo Record  
H) USFWS Wet Season Protocol Survey Results for Federally Listed Branchiopods – Data Sheets

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<sup>1</sup> USFWS (U.S. Fish and Wildlife Service). November 13, 2017. Survey Guidelines for the Large Listed Branchiopods. United State Department of the Interior. USFWS, Pacific Southwest Region. Accessed October 2020-June 2021. <https://www.fws.gov/ventura/docs/species/protocols/vpshrimp/shrimp2017.pdf>.



# 1 Introduction

This Report documents the results of the wet season surveys for vernal pool branchiopods conducted within the Project Study Area (PSA) located in south eastern Sacramento County, California. Surveys focused on the determination of presence/no presence for the federally threatened vernal pool fairy shrimp (*Branchinecta lynchi*) and federally endangered vernal pool tadpole shrimp (*Lepidurus packardii*). Surveys were performed in accordance with the protocols listed above. No wet season surveys have been previously conducted as part of the Project. Wet season surveys were conducted between February 3, 2021 and April 28, 2021.

The request to conduct wet season surveys was submitted to the USFWS on September 28, 2020 and approved by the USFWS on September 29, 2020 (Attachment A). Wet season surveys were conducted over 15 total days within the PSA in February, March, and April 2021. Wet season surveys were led and performed by Heather Moine, a Dudek biologist holding a Section 10(a)(1)(A) permit and a Specific Use Scientific Collecting Permit (TE-60147A-1; S-202420002-20262-001). The permitted biologist was supported by Dudek biologists with appropriate field experience including Laura Burris, Adam Crawford, Sarah Foster, Anna Godinho, Paul Keating, Morgan Kennedy, Allie Sennett, and Naomi Serratos. A summary of wet season survey dates, PSA environmental conditions, and biologists who conducted the surveys is provided in Table 1 below.

**Table 1. Wet Season Survey Dates, Site Conditions, and Biologists Present Summary**

| Date of Survey    | Site Conditions                             | Permitted Biologist        | Assisting Biologists          |
|-------------------|---------------------------------------------|----------------------------|-------------------------------|
| February 3, 2021  | 48–50 °F; 10–100% cloud cover; 0–3 mph wind | Heather Moine <sup>a</sup> | Laura Burris, Morgan Kennedy  |
| February 4, 2021  | 40–55 °F; 10–50% cloud cover; 0–3 mph wind  | Heather Moine              | Laura Burris, Morgan Kennedy  |
| February 5, 2021  | 54–63 °F; 0–10% cloud cover; 0 mph wind     | Heather Moine              | Laura Burris, Morgan Kennedy  |
| February 17, 2021 | 41–60 °F; 0–10% cloud cover; 1–15 mph wind  | Heather Moine              | Paul Keating, Adam Crawford   |
| February 18, 2021 | 39–61 °F; 30–90% cloud cover; 0–5 mph wind  | Heather Moine              | Morgan Kennedy, Adam Crawford |
| February 18, 2021 | 50–54 °F; 100% cloud cover; 0–3 mph wind    | Heather Moine              | Morgan Kennedy, Paul Keating  |
| March 3, 2021     | 46–60 °F; 100% cloud cover; 0–4 mph wind    | Heather Moine              | Anna Godinho, Paul Keating    |
| March 4, 2021     | 49–67 °F; 0% cloud cover; 0–4 mph wind      | Heather Moine              | Anna Godinho, Paul Keating    |
| March 17, 2021    | 41–58 °F; 90% cloud cover; 0–4 mph wind     | Heather Moine              | Adam Crawford, Naomi Serratos |
| March 18, 2021    | 47–59 °F; 100% cloud cover; 0–3 mph wind    | Heather Moine              | Adam Crawford, Naomi Serratos |
| March 31, 2021    | 61–81 °F; 0% cloud cover; 0–2 mph wind      | Heather Moine              | Adam Crawford                 |
| April 1, 2021     | 48–80 °F; 0–10% cloud cover; 0–3 mph wind   | Heather Moine              | Adam Crawford                 |
| April 14, 2021    | 58–71 °F; 0–10% cloud cover; 0–4 mph wind   | Heather Moine              | Adam Crawford                 |

**Table 1. Wet Season Survey Dates, Site Conditions, and Biologists Present Summary**

| Date of Survey | Site Conditions                           | Permitted Biologist | Assisting Biologists         |
|----------------|-------------------------------------------|---------------------|------------------------------|
| April 15, 2021 | 63–73 °F; 0% cloud cover;<br>0–5 mph wind | Heather Moine       | Adam Crawford, Allie Sennett |
| April 28, 2021 | 52–83 °F; 0% cloud cover;<br>0–4 mph wind | Heather Moine       | Allie Sennett, Sarah Foster  |

<sup>a</sup> Heather Moine Section 10(a)(1)(A) permitted (TE-60147A-1)

## 2 Project Setting

### 2.1 Location

The approximately 742.44-acre PSA is located at the southwest corner of the intersection of Meiss Road and Dillard Road in the unincorporated community of Sloughhouse within south eastern Sacramento County. The PSA excludes existing solar facilities within the site. The PSA is primarily used for cattle grazing or other agricultural operations, and there is an existing solar facility located in the southeast corner of the site (Attachment B). It should be noted that the PSA changed slightly from the original USFWS request authorization resulting in a change from 741.20 acres to 742.44 acres to include two roadside ditches along Dillard Road; however, these roadside ditches were not sampled during the wet season surveys. Project location details are detailed as follows:

- County: Sacramento.
- Public Land Survey System: Cosumnes Land Grant.
- U.S. Geological Survey (USGS) 7.5-Minute Quadrangle (Quad): Sloughhouse.
- Latitude, Longitude: 38.473731, -121.184568 (centroid, decimal degrees).
- Assessor Parcel Numbers (APNs): 12601100010000, 12601100030000.
- Elevation Range: 95 to 160 feet above mean sea level (amsl).
- Average Elevation: 128 feet amsl.
- PSA: 742.44 acres.

### 2.2 Soils

According to the Natural Resources Conservation Service<sup>2</sup>, 16 soil units are present within the PSA (Attachment C). Each soil unit, typical landform or geomorphic position within the landscape, drainage class (i.e., frequency and

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<sup>2</sup> USDA (U.S. Department of Agriculture). 2021. "Web Soil Survey". USDA, Natural Resources Conservation Service, Soil Survey Staff. Accessed February 2021. <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>.



duration of wet periods in conditions similar to those in which it was developed), hydric listing, and total area is detailed in Table 2 below.

**Table 2. Summary of Soil Units Within the Project Study Area (PSA)**

| Soil Map Unit Name                                  | Landform                       | Drainage Class                                | Hydric | Total Area (acres) |
|-----------------------------------------------------|--------------------------------|-----------------------------------------------|--------|--------------------|
| Bruella sandy loam, 0–2% slopes                     | Terraces                       | Well-drained                                  | No     | 3.15               |
| Bruella sandy loam, 2–5% slopes                     | Terraces                       | Well-drained                                  | No     | 58.80              |
| Columbia sandy loam, 0–2% slopes                    | Flood plains                   | Somewhat poorly drained, occasionally flooded | Yes    | 17.93              |
| Galt clay, 0–1% slopes                              | Basin floors on fan remnants   | Somewhat poorly drained                       | Yes    | 33.0               |
| Galt clay, 2-5% slopes                              | Basin floors on fan remnants   | Moderately well drained                       | Yes    | 126.62             |
| Hadselville-Pentz complex, 2–30% slopes             | Hills                          | Moderately well drained to well drained       | No     | 231.74             |
| Peters clay, 1–8% slopes                            | Hills                          | Well drained                                  | No     | 56.94              |
| Redding gravelly loam, 0–8% slopes                  | Fan remnants                   | Moderately well drained                       | No     | 15.29              |
| Reiff fine sandy loam, 0–2% slopes                  | Flood plains                   | Well drained, occasionally flooded            | No     | 96.11              |
| Sailboat silt loam, drained, 0–2% slopes            | Flood plains on natural levees | Somewhat poorly drained, occasionally flooded | Yes    | 3.50               |
| San Joaquin silt loam, 0–3% slopes                  | Terraces                       | Moderately well drained                       | No     | 14.02              |
| San Joaquin silt loam, 0–8% slopes                  | Terraces                       | Moderately well drained                       | No     | 54.45              |
| San Joaquin-Durixeralfs complex, 0–1% slopes        | Terraces                       | Moderately well drained to well drained       | No     | 0.25               |
| San Joaquin-Galt complex, leveled, 0–1% slopes      | Terraces                       | Moderately well drained                       | Yes    | 2.87               |
| San Joaquin-Galt complex, 0–3% slopes               | Terraces                       | Moderately well drained                       | Yes    | 18.55              |
| San Joaquin-Xerarents complex, leveled, 0–1% slopes | Terraces                       | Moderately well drained to well drained       | No     | 4.89               |

Source: USDA 2021

**Notes:**

The total soil cover (738.11 acres) does not account for aquatic or developed land cover, and therefore is less than the overall PSA (742.44 acres).

### 2.3 Watershed and Hydrology

The PSA is located within the Upper Cosumnes River watershed, which drains approximately 180 square miles of land in El Dorado, Amador, and Sacramento Counties (Hydrological Unit Code 1804001306)<sup>3</sup>. A complex of seasonally inundated aquatic features generally drains the Project in a southwesterly direction, and the Cosumnes River flows within the western boundary of the PSA. The western half of the PSA is located within the National Flood

<sup>3</sup> CDFW (California Department of Fish and Wildlife). 2020. *Biogeographic Information and Observation System: BIOS Viewer Version 5.94.01*. Accessed December 2020. <http://www.dfg.ca.gov/biogeodata/bios/>.

Hazard Layer 1% 100-year floodplain of the Cosumnes River<sup>4</sup>. However, the Cosumnes River within the PSA is bounded by levees intended to contain the river and protect against overtopping during a normal rain year (Attachment D).

### 2.3.1 Aquatic Resources

Dudek conducted an Aquatic Resources Delineation (ARD) within the PSA on October 27, 29, and 30, November 4 and 9 through 13, 2020, and March 3, 2021. The purpose of an ARD is to identify aquatic resources that may be potentially subject to agency jurisdiction pursuant to regulations in Section 401 and 404 of the Clean Water Act, Porter-Cologne Act, California Fish and Game Code, and California Environmental Quality Act Guidelines. Aquatic resources within the PSA were delineated based on methodology described in the *US Army Corps of Engineers Wetlands Delineation Manual* (US Army Corps of Engineers [USACE] 1987<sup>5</sup>) and the *Regional Supplement for the Arid West Region* (USACE 2008a<sup>6</sup>). Non-wetland waters of the United States and/or state were delineated based on the presence of an ordinary high water mark (OHWM), as determined using the methodology in the *OHWM Field Guide for the Arid West Region* (USACE 2008b<sup>7</sup>). Aquatic resources were recorded and mapped in the field using a Trimble R1 Global Navigation Satellite System Receiver with sub-meter accuracy and ArcGIS Collector app for iOS. On June 9, 2021 the final ARD Report with a formal request for an Approved Jurisdictional Delineation was submitted to the USACE, Sacramento District, to definitively determine and approve the extent of waters of the United States.

A total of ten aquatic resource types were documented in the proposed Project area and the potential mitigation lands of the PSA, including freshwater emergent wetland, seasonal wetland, stock pond, vernal pool, ditch, ephemeral drainage, intermittent drainage, perennial drainage, seasonal wetland swale, and upland swale, as included in Table 3.

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<sup>4</sup> FEMA (Federal Emergency Management Agency). 2020. *National Flood Hazard Layer 1% 100-Year Floodplain*. Accessed December 2020. <https://www.fema.gov/flood-maps/products-tools/national-flood-hazard-layer>.

<sup>5</sup> USACE (United States Army Corps of Engineers). 1987. *Corps of Engineers Wetlands Delineation Manual*. Online ed. Environmental Laboratory, Wetlands Research Program Technical Report Y-87-1. Vicksburg, Mississippi: United States Army Engineer Waterways Experiment Station. January 1987.

<sup>6</sup> USACE. 2008a. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)*. Environmental Laboratory, ERDC/EL TR-08-28. U.S. Army Engineer Research and Development Center. Vicksburg, Mississippi. September 2008.

<sup>7</sup> USACE. 2008b. *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the United States*. Cold Regions Research and Engineering Laboratory, ERDC/CRREL TR-08-12. U.S. Army Engineer Research and Development Center. Hanover, New Hampshire. August 2008.



**Table 3. Summary of Aquatic Resources Within the Project Study Area (PSA)**

| Aquatic Resource Type                      | Total Area (acres) |
|--------------------------------------------|--------------------|
| Ditch                                      | 1.93               |
| Ephemeral Drainage                         | 1.11               |
| Freshwater Emergent Wetland                | 0.02               |
| Intermittent Drainage                      | 2.36               |
| Perennial Drainage                         | 24.10              |
| Pond                                       | 17.01              |
| Seasonal Wetland                           | 14.16              |
| Seasonal Wetland Swale                     | 2.15               |
| Upland Swale                               | 0.63               |
| Vernal Pool                                | 6.30               |
| <b>Total Aquatic Resources</b>             | <b>69.77</b>       |
| Upland land covers (not aquatic resources) | 672.68             |
| <b>Grand Total</b>                         | <b>742.44</b>      |

Source: SSSLIC. 2021a. *Aquatic Resources Delineation Report for the Sloughhouse Solar Project*. Prepared by Dudek. Sacramento, California: Dudek. May 2021.

## 2.4 Vegetation Communities and Land Cover

General vegetation communities and land cover types were documented within the PSA (Attachment E) and include the following:

- California annual grassland (combines California annual grassland and valley grassland) is the dominant vegetation community present within the PSA. Dominant species in this community include soft brome (*Bromus hordeaceus*), medusa head (*Elymus caput-medusae*), and narrow tarweed (*Holocarpha virgata*). The shrub and tree layer are absent from this vegetation community. Numerous aquatic features occur throughout the grassland.
- Valley oak woodland (combines mixed riparian woodland and valley foothill riparian) comprises the riparian habitat along the Cosumnes River, a portion of which is located within the northern extent of the PSA. Valley oak (*Quercus lobata*) was the dominant overstory species, with a lesser abundance of Fremont's cottonwood (*Populus fremontii*), Goodding's willow (*Salix gooddingii*), Northern California walnut (*Juglans hindsii*), and oak species (*Quercus* spp.). Shrubs occurred intermittently and included Himalayan blackberry (*Rubus armeniacus*) and California grape (*Vitis californica*). The herbaceous layer was dominated by disturbance-tolerant upland species, including yellow star-thistle (*Centaurea solstitialis*), Italian plumeless thistle (*Carduus pycnocephalus*), and non-native grasses like those described for California annual grassland.
- Agricultural – Land cover classified as agricultural typically includes lands where farming and other agricultural practices take place, including pastures, row crops and other unidentified croplands. Production practices observed in the PSA include flood-irrigation, and cultivation; followed by harvesting and discing. After discing, some fields appear to remain fallow for short periods of time, allowing for the

establishment of annual and biennial native and non-native annual grasses and broad-leaved plants, including many non-native species.

- Developed (combines low density development and urban) – This land cover type includes areas that have been completely altered by human activities and contain little to no vegetation. Specifically, such areas include buildings, paved and gravel roadways and trails, gravel lots, and other constructed environments. Disturbed land cover in the PSA includes two residences along Meiss Road, and the existing solar facility in the southeast vicinity of the PSA along Dillard Road.

### 3 Methodology

Wet season surveys were performed in accordance with the USFWS *Survey Guidelines for the Listed Large Branchiopods*<sup>8</sup> and the 10(a)(1)(A) permit holder’s recovery permit. For the wet season surveys, site visits began after initial storm events when potential listed large branchiopod habitat had become inundated. All potential habitat was sampled at 14-day intervals after initial inundation of habitat. Sampling continued within each potential habitat until it dried. At each wet season visit, representative portions of the bottom, edges, and vertical water column of the features were adequately sampled using a seine, dip net, or aquarium net. The contents of the nets were examined and emptied frequently. Information on pool conditions and species were recorded.

### 4 Results

A total of 113 features were surveyed during the 2020/2021 wet season survey. The features consisted of freshwater emergent wetland, seasonal wetland, stock pond, vernal pool, ditch, ephemeral drainage, intermittent drainage, perennial drainage, river, seasonal wetland swale, upland swale, and ponded features. During the seven survey passes (including 15 survey days), none of the features were found occupied by federally threatened vernal pool fairy shrimp (*Branchinecta lynchi*), federally endangered vernal pool tadpole shrimp (*Lepidurus packardii*), or any other federally listed large branchiopods. However, the non-listed California fairy shrimp (*Lindleriella occidentalis*) were observed in six features (D-02, P-02, SW-28, US-03, VP-07, and VP-16). A summary of results has been provided in Table 4. Additionally, photo plates of the PSA and various aquatic features sampled have been provided (Attachment G). Data sheets with results by feature and by date have been provided in Attachment H.

**Table 4. Results Summary of Wet Season Surveys**

| Feature ID | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae | Diptera Chironomidae | Platyhelminths (flatworms) |
|------------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------|----------------------------|
| D-01       |             |              |          |           |           |            |           |                   |                      |                            |

<sup>8</sup> USFWS (U.S. Fish and Wildlife Service). November 13, 2017. Survey Guidelines for the Large Listed Branchiopods. United State Department of the Interior. USFWS, Pacific Southwest Region. Accessed October-November 2020. <https://www.fws.gov/ventura/docs/species/protocols/vpshrimp/shrimp2017.pdf>.



**Table 4. Results Summary of Wet Season Surveys**

| Feature ID | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae | Diptera Chironomidae | Platyhelminths (flatworms) |
|------------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------|----------------------------|
| D-02       | LIOC        |              |          | x         | x         | x          | x         | x                 | x                    | x                          |
| ED-01      |             |              |          |           |           |            |           |                   |                      | x                          |
| ED-02      |             |              |          | x         | x         | x          | x         | x                 | x                    | x                          |
| ED-03      |             |              |          |           |           |            |           |                   |                      |                            |
| ED-04      |             |              |          |           |           |            |           |                   |                      |                            |
| ED-05      |             |              |          |           |           |            |           |                   |                      | x                          |
| FEW-01     |             |              |          |           |           |            |           |                   |                      |                            |
| ID-01      |             |              |          | x         | x         | x          | x         | x                 | x                    | x                          |
| P-01       |             |              |          | x         | x         | x          | x         |                   | x                    |                            |
| P-02       | LIOC        |              | x        | x         | x         | x          | x         |                   | x                    | x                          |
| P-03       |             |              | x        | x         | x         | x          | x         |                   | x                    |                            |
| PF-01      |             |              |          | x         | x         |            |           |                   |                      |                            |
| PF-02      |             |              |          |           |           |            |           |                   |                      |                            |
| PF-03      |             |              |          | x         | x         | x          |           |                   |                      |                            |
| PF-04      |             |              |          |           |           |            |           |                   |                      |                            |
| PF-05      |             |              |          |           |           |            |           |                   |                      |                            |
| PF-06      |             |              |          |           |           |            |           |                   |                      |                            |
| PF-07      |             |              |          | x         | x         |            |           |                   |                      | x                          |
| PF-08      |             |              |          |           | x         | x          |           |                   |                      | x                          |
| PF-09      |             |              |          |           |           |            |           |                   |                      |                            |
| PF-10      |             |              |          |           |           |            |           |                   |                      |                            |
| SW-01      |             |              |          |           |           |            |           |                   |                      |                            |
| SW-02      |             |              |          |           |           |            |           |                   |                      |                            |
| SW-03      |             |              |          |           |           |            |           |                   |                      |                            |
| SW-04      |             |              |          |           |           |            |           |                   |                      |                            |
| SW-05      |             |              |          |           |           |            |           |                   |                      |                            |
| SW-06      |             |              |          |           |           |            |           |                   |                      |                            |
| SW-07      |             |              |          |           |           | x          |           |                   |                      |                            |
| SW-08      |             |              |          |           |           |            |           |                   |                      |                            |
| SW-09      |             |              |          |           |           |            |           |                   |                      |                            |
| SW-10      |             |              |          |           |           |            |           |                   |                      |                            |
| SW-11      |             |              |          |           |           |            |           |                   |                      |                            |
| SW-12      |             |              |          |           |           |            |           |                   |                      |                            |
| SW-13      |             |              |          |           |           |            |           |                   |                      |                            |

**Table 4. Results Summary of Wet Season Surveys**

| Feature ID | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae | Diptera Chironomidae | Platyhelminths (flatworms) |
|------------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------|----------------------------|
| SW-14      |             |              |          |           |           |            |           |                   |                      |                            |
| SW-15      |             |              |          |           | X         |            |           |                   |                      | X                          |
| SW-16      |             |              |          |           |           |            |           |                   |                      |                            |
| SW-17      |             |              |          |           |           |            |           |                   |                      |                            |
| SW-18      |             |              |          |           |           |            |           |                   |                      |                            |
| SW-19      |             |              |          |           |           |            |           |                   |                      |                            |
| SW-20      |             |              |          |           |           |            |           |                   |                      |                            |
| SW-21      |             |              |          |           |           |            |           |                   |                      |                            |
| SW-22      |             |              |          |           |           | X          |           |                   |                      |                            |
| SW-23      |             |              | X        | X         | X         | X          | X         | X                 | X                    | X                          |
| SW-24      |             |              |          |           | X         |            |           |                   |                      | X                          |
| SW-25      |             |              |          |           |           |            |           |                   |                      |                            |
| SW-26      |             |              |          |           |           |            |           |                   |                      |                            |
| SW-27      |             |              |          |           |           |            |           |                   |                      |                            |
| SW-28      | LIOC        |              |          | X         | X         | X          |           |                   | X                    | X                          |
| SW-29      |             |              |          | X         | X         | X          | X         | X                 | X                    | X                          |
| SW-30      |             |              |          | X         | X         | X          |           |                   | X                    | X                          |
| SW-31      |             |              |          | X         |           | X          |           |                   |                      |                            |
| SW-32      |             |              |          |           |           |            |           |                   |                      |                            |
| SW-33      |             |              |          | X         | X         | X          | X         | X                 | X                    | X                          |
| SW-34      |             |              | X        | X         | X         | X          | X         |                   |                      | X                          |
| SW-35      |             |              |          | X         |           | X          | X         |                   | X                    | X                          |
| SW-36      |             |              |          | X         |           |            |           |                   |                      | X                          |
| SW-37      |             |              |          |           |           |            |           |                   |                      | X                          |
| SW-38      |             |              |          |           |           |            |           |                   |                      |                            |
| SW-39      |             |              |          |           |           |            |           |                   |                      |                            |
| SW-40      |             |              |          |           |           | X          |           |                   |                      |                            |
| SW-41      |             |              |          |           |           |            |           |                   |                      |                            |
| SW-42      |             |              |          | X         |           |            |           |                   |                      |                            |
| SW-43      |             |              |          | X         | X         | X          |           |                   |                      | X                          |
| SW-44      |             |              |          | X         | X         |            |           |                   |                      | X                          |
| SW-45      |             |              |          | X         |           | X          |           |                   |                      | X                          |
| SW-46      |             |              |          | X         |           |            |           |                   |                      | X                          |
| SW-47      |             |              |          |           |           |            |           |                   |                      | X                          |



**Table 4. Results Summary of Wet Season Surveys**

| Feature ID | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae | Diptera Chironomidae | Platyhelminths (flatworms) |
|------------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------|----------------------------|
| SW-48      |             |              |          | x         |           |            |           |                   |                      | x                          |
| SW-49      |             |              |          |           |           |            |           |                   |                      |                            |
| SW-50      |             |              | x        |           | x         | x          |           |                   |                      | x                          |
| SW-51      |             |              |          | x         |           |            |           |                   |                      | x                          |
| SWS-01     |             |              |          |           |           |            |           |                   |                      |                            |
| SWS-02     |             |              |          |           |           |            |           |                   |                      |                            |
| SWS-03     |             |              |          |           |           |            |           |                   |                      |                            |
| SWS-04     |             |              | x        | x         | x         | x          |           |                   | x                    | x                          |
| SWS-05     |             |              |          |           |           |            |           |                   |                      |                            |
| SWS-06     |             |              |          | x         | x         | x          |           |                   |                      | x                          |
| SWS-07     |             |              | x        | x         | x         | x          | x         | x                 | x                    | x                          |
| SWS-08     |             |              |          |           |           |            |           |                   |                      |                            |
| SWS-09     |             |              |          |           |           | x          |           |                   |                      |                            |
| SWS-10     |             |              | x        | x         | x         | x          | x         |                   | x                    | x                          |
| SWS-11     |             |              |          |           |           |            |           |                   |                      |                            |
| SWS-12     |             |              |          |           | x         | x          | x         |                   |                      | x                          |
| SWS-13     |             |              |          |           |           |            |           |                   |                      |                            |
| SWS-14     |             |              |          |           |           |            |           |                   |                      |                            |
| SWS-15     |             |              |          |           |           |            |           |                   |                      |                            |
| US-01      |             |              |          |           |           |            |           |                   |                      |                            |
| US-02      |             |              |          |           |           |            |           |                   |                      |                            |
| US-03      | LIOC        |              |          | x         | x         | x          |           |                   |                      | x                          |
| US-04      |             |              |          |           |           |            |           |                   |                      |                            |
| US-05      |             |              |          | x         | x         |            |           |                   |                      | x                          |
| US-06      |             |              |          |           |           |            |           |                   |                      |                            |
| US-07      |             |              |          |           |           |            |           |                   |                      |                            |
| US-08      |             |              |          |           |           |            |           |                   |                      |                            |
| VP-01      |             |              |          |           |           |            |           |                   |                      |                            |
| VP-02      |             |              |          |           | x         |            |           |                   |                      |                            |
| VP-03      |             |              |          |           |           | x          |           |                   |                      |                            |
| VP-04      |             |              |          |           |           |            |           |                   |                      |                            |
| VP-05      |             |              |          |           |           |            |           |                   |                      |                            |
| VP-06      |             |              |          | x         | x         |            |           |                   |                      | x                          |
| VP-07      | LIOC        |              | x        | x         | x         | x          |           |                   | x                    | x                          |

**Table 4. Results Summary of Wet Season Surveys**

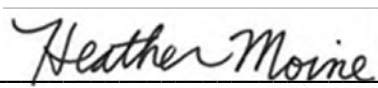
| Feature ID | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae | Diptera Chironomidae | Platyhelminths (flatworms) |
|------------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------|----------------------------|
| VP-08      |             |              |          | X         | X         | X          |           |                   |                      | X                          |
| VP-09      |             |              |          | X         |           | X          |           |                   |                      | X                          |
| VP-10      |             |              |          |           |           |            |           |                   |                      |                            |
| VP-11      |             |              |          | X         | X         | X          |           |                   |                      | X                          |
| VP-12      |             |              |          | X         |           | X          |           |                   |                      | X                          |
| VP-13      |             |              |          | X         |           | X          |           |                   | X                    | X                          |
| VP-14      |             |              |          | X         |           | X          |           |                   |                      | X                          |
| VP-15      |             |              | X        | X         | X         | X          |           |                   | X                    | X                          |
| VP-16      | LIOC        |              | X        | X         |           | X          |           |                   | X                    | X                          |
| VP-17      |             |              |          |           |           |            |           |                   |                      |                            |

**Notes:**

LIOC - *Lindieriella occidentalis*

## 5 Conclusion

I certify that the information in this Report for the wet season surveys conducted within the PSA and attached exhibits fully and accurately represents my work.



7/28/2021

(Signature + Date)

Heather Moine (TE-60147A-1; S-202420002-20262-001)  
Senior Biologist, Dudek





# Attachment A

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USFWS Wet Season Survey Request and Authorization

**From:** [Lantz, Samantha M](#)  
**Sent:** Tuesday, September 29, 2020 10:23 AM  
**To:** [Morgan Kennedy](#)  
**Cc:** [David Hochart](#); [Michael Henry](#); [Perkins-Taylor, Ian E](#)  
**Subject:** Re: [EXTERNAL] FW: USFWS Survey Request For Large Listed Branchiopods (Sacramento County)

---

You may consider this email authorization to conduct wet season and dry season surveys for large listed branchiopods in the proposed Sloughhouse Project survey area in Sacramento County, per the conditions of the relevant recovery permits (TE-53771B; TE-031848; TE-051248; TE-60147A; TE-813545) and as specified in your email request dated September 28, 2020.

Remember to carry a copy of your permit(s) while doing the work and to follow the terms and conditions of the permit(s), including the reporting requirements. In your report(s), please include which activities were authorized, the names of all persons involved in each activity, their recovery permit numbers, if applicable, and the date of this authorization, to help ensure that we correctly record the fulfillment of the reporting requirement under this authorization. We ask that you use UTM coordinates for all spatial data. Please use **Service reference number 2020-TA-3007** and send reports to me and Ian Perkins-Taylor (biologist in our Sac Valley division) (cced here).

Best,

Sam

~~~~~

Samantha Lantz, PhD  
Fish and Wildlife Biologist  
USFWS, Sacramento Field Office  
Listing and Recovery Division  
2800 Cottage Way W-2605  
Sacramento, CA 95825-1888  
Phone: 916-414-6526  
Pronouns: she/her/hers

In an effort to slow the spread of the coronavirus (COVID-19), staff in the Sacramento Fish and Wildlife Office have implemented an aggressive telework schedule. At this time, we are responding to requests for information via email or phone as often as possible as we do not have the in-office capacity to support regular mail service. We appreciate your understanding.

---

**From:** Morgan Kennedy <mkennedy@dudek.com>  
**Sent:** Tuesday, September 29, 2020 9:41 AM  
**To:** Lantz, Samantha M <samantha\_lantz@fws.gov>  
**Cc:** David Hochart <dhochart@dudek.com>; Michael Henry <mhenry@dudek.com>; Paul Lemons <plemons@dudek.com>  
**Subject:** RE: [EXTERNAL] FW: USFWS Survey Request For Large Listed Branchiopods (Sacramento County)

Good Morning Samantha,

Yes, please move forward with processing the request for surveys, excluding Paul Lemons.



Thanks,



**Morgan Kennedy**  
*Environmental Compliance Manager / Ecologist*  
858 Lincoln Way, Suite 208 / Auburn, CA 95603  
O: 530.863.4276 x 3976 / C: 916.661.2498  
[www.dudek.com](http://www.dudek.com)

---

**From:** Lantz, Samantha M <[samantha\\_lantz@fws.gov](mailto:samantha_lantz@fws.gov)>  
**Sent:** Tuesday, September 29, 2020 9:39 AM  
**To:** Morgan Kennedy <[mkenedy@dudek.com](mailto:mkenedy@dudek.com)>  
**Cc:** David Hochart <[dhochart@dudek.com](mailto:dhochart@dudek.com)>; Michael Henry <[mhenry@dudek.com](mailto:mhenry@dudek.com)>; Paul Lemons <[plemons@dudek.com](mailto:plemons@dudek.com)>  
**Subject:** Re: [EXTERNAL] FW: USFWS Survey Request For Large Listed Branchiopods (Sacramento County)

Hi Morgan,

We're missing a 2019 annual report for Paul Lemons. Please let me know if you want me to move forward with the survey authorizaon f or Dudek except for Mr. Lemons. Alternav ely, I can wait and process the request upon receipt of the missing report. (Apologies in advance if it was sent but not filed properly.)

Thanks,

Sam

~~~~~

Samantha Lantz, PhD  
Fish and Wildlife Biologist  
USFWS, Sacramento Field Office  
Listing and Recovery Division  
2800 Cottage Way W-2605  
Sacramento, CA 95825-1888  
Phone: 916-414-6526  
Pronouns: she/her/hers

In an effort to slow the spread of the coronavirus (COVID-19), staff in the Sacramento Fish and Wildlife Office have implemented an aggressive telework schedule. At this time, we are responding to requests for information via email or phone as often as possible as we do not have the in-office capacity to support regular mail service. We appreciate your understanding.

---

**From:** Morgan Kennedy <[mkenedy@dudek.com](mailto:mkenedy@dudek.com)>  
**Sent:** Monday, September 28, 2020 11:49 AM  
**To:** Lantz, Samantha M <[samantha\\_lantz@fws.gov](mailto:samantha_lantz@fws.gov)>; Hull, Josh <[Josh\\_Hull@fws.gov](mailto:Josh_Hull@fws.gov)>  
**Cc:** David Hochart <[dhochart@dudek.com](mailto:dhochart@dudek.com)>; Michael Henry <[mhenry@dudek.com](mailto:mhenry@dudek.com)>  
**Subject:** [EXTERNAL] FW: USFWS Survey Request For Large Listed Branchiopods (Sacramento County)

**This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.**

Good A. ernoon,

Dudek is providing this request to the U.S. Fish and Wildlife Service (USFWS) to conduct both wet season and dry season surveys for large listed branchiopods (i.e., vernal pool fairy shrimp [*Branchinecta lynchi*] and vernal pool tadpole shrimp [*Lepidurus packardii*]) in the proposed Sloughhouse Project (Project) survey area, Sacramento County, California. Please see attached formal request.

If you have any questions regarding this request, please feel free to contact me anytime at [morgkennedy@gmail.com](mailto:morgkennedy@gmail.com), 916.661.2498. Thank you for your consideration.



**Morgan Kennedy**

*Environmental Compliance Manager / Ecologist*  
858 Lincoln Way, Suite 208 / Auburn, CA 95603  
O: 530.863.4276 x 3976 / C: 916.661.2498  
[www.dudek.com](http://www.dudek.com)

---

**From:** Markegard, Sarah I <[sarah\\_markegard@fws.gov](mailto:sarah_markegard@fws.gov)>  
**Sent:** Monday, September 28, 2020 11:39 AM  
**To:** Morgan Kennedy <[mkenedy@dudek.com](mailto:mkenedy@dudek.com)>  
**Subject:** Automatic reply: [EXTERNAL] USFWS Survey Request For Large Listed Branchiopods (Sacramento County)

Thank you for your message. I have accepted a new position with the U.S. Fish and Wildlife Service in Anchorage, Alaska, and will be unable to respond to email messages during my transition to the new office.

Please direct all Recovery Permit correspondence for the Sacramento Fish and Wildlife Office (SFWO) to the Acting Recovery Permit Coordinator, Sam Lantz ([samantha\\_lantz@fws.gov](mailto:samantha_lantz@fws.gov)).

For all other correspondence related to listing or recovery of federally threatened and endangered species in the SFWO jurisdiction, please contact the Listing and Recovery Division Manager, Josh Hull ([josh\\_hull@fws.gov](mailto:josh_hull@fws.gov)).

---

**From:** Morgan Kennedy  
**Sent:** Monday, September 28, 2020 11:31 AM  
**To:** [sarah\\_markegard@fws.gov](mailto:sarah_markegard@fws.gov); [jody\\_holzworth@fws.gov](mailto:jody_holzworth@fws.gov); [samuel\\_sosa@fws.gov](mailto:samuel_sosa@fws.gov)  
**Cc:** David Hochart <[dhochart@dudek.com](mailto:dhochart@dudek.com)>; Michael Henry <[mhenry@dudek.com](mailto:mhenry@dudek.com)>  
**Subject:** USFWS Survey Request For Large Listed Branchiopods (Sacramento County)

Good Afternoon,

Dudek is providing this request to the U.S. Fish and Wildlife Service (USFWS) to conduct both wet season and dry season surveys for large listed branchiopods (i.e., vernal pool fairy shrimp [*Branchinecta lynchi*] and vernal pool tadpole shrimp [*Lepidurus packardii*]) in the proposed Sloughhouse Project (Project) survey area, Sacramento County, California. Please see attached formal request.

If you have any questions regarding this request, please feel free to contact me anytime at [morgkennedy@gmail.com](mailto:morgkennedy@gmail.com), 916.661.2498. Thank you for your consideration.

**Morgan Kennedy**





*Environmental Compliance Manager / Ecologist*

858 Lincoln Way, Suite 208 / Auburn, CA 95603

O: 530.863.4276 x 3976 / C: 916.661.2498

[www.dudek.com](http://www.dudek.com)

September 25, 2020

12957

U.S. Fish and Wildlife Service  
Pacific Southwest Region (Region 8)  
2800 Cottage Way, Room W-2605  
Sacramento, CA 95825  
916.414.6600

**Subject:** *Request to the U.S. Fish and Wildlife Service to Conduct Wet and Dry Season Large Listed Branchiopod Surveys, Proposed Sloughouse Project, Sacramento County, California*

Dear Sir or Madam:

Dudek is providing this request to the U.S. Fish and Wildlife Service (USFWS) to conduct both wet season and dry season surveys for large listed branchiopods (i.e., vernal pool fairy shrimp [*Branchinecta lynchi*] and vernal pool tadpole shrimp [*Lepidurus packardii*]) in the proposed Sloughouse Project (Project) survey area (Attachment 1).

## Proposed Project and Survey Area

The survey area for the proposed Project could include a total of approximately 741.20 acres, pending on-going proposed Project design efforts (Attachment 2). According to the USFWS, the survey area is located in 'Survey Zone A' of California for listed large branchiopods.

## Potential Branchiopod Habitat

For the purpose of this request, Dudek evaluated potential branchiopod habitat within the survey area based on the following desktop data resources:

- California Aquatic Resources Inventory (CARI).<sup>1</sup>
- National Wetland Inventory (NWI).<sup>2</sup>
- South Sacramento Habitat Conservation Plan (SSHCP) land cover types.<sup>3</sup>
- U.S. Geological Society (USGS) National Hydrography dataset (NHD).<sup>4</sup>

The desktop evaluation of potential branchiopod habitat in the survey area found a total of 41.27 acres of potential habitat, as summarized in Table 1 below.

---

<sup>1</sup> SFEI (San Francisco Estuary Institute and the Aquatic Science Center). CARI. 2020. Accessed September 2020. <https://www.sfei.org/cari>.

<sup>2</sup> USFWS. 2020. NWI. Accessed September 2020. <https://www.fws.gov/wetlands/>.

<sup>3</sup> Sacramento County. 2019. SSHCP. Accessed September 2020. <https://planning.saccounty.net/PlansandProjectsIn-Progress/Pages/SSHCPPlan.aspx>.

<sup>4</sup> USGS. 2020. National Hydrography. Accessed September 2020. <https://www.usgs.gov/core-science-systems/ngp/national-hydrography>.



**Table 1. Summary of Potential Branchiopod Habitat Feature Types in Proposed Project Survey Area**

| Aquatic Feature Type          | Total of Individual Features in the Survey Area | Total Acreage of Features in Survey Area |
|-------------------------------|-------------------------------------------------|------------------------------------------|
| Freshwater emergent wetland   | 4                                               | 13.92                                    |
| Freshwater pond               | 3                                               | 1.32                                     |
| Depressional seasonal feature | 6                                               | 3.94                                     |
| Individual vernal pool        | 79                                              | 17.34                                    |
| Swale                         | 45                                              | 4.00                                     |
| Other- Depressional           | 1                                               | 0.75                                     |
| <b>Totals</b>                 | <b>138</b>                                      | <b>41.27</b>                             |

The survey area does not contain USFWS Designated Critical Habitat (DCH). Specifically, there are DCH occurrences of vernal pool fairy shrimp (Unit VERFS 14B), and vernal pool tadpole shrimp (Unit VERTS 9A) approximately 1.4 miles southwest of the survey area.

## Survey Request Overview

Dudek would like to initiate dry season surveys as soon as possible in the survey area pending USFWS approval. If possible, the dry season surveys would be conducted before the 2020 through 2021 wet season (i.e., prior to November 1). In the case that precipitation events occur prior to the dry season survey timing detailed above, the dry season surveys for the proposed Project will be shifted to the following dry season (i.e., beginning May 2020).

Wet season surveys would commence approximately two weeks following the first precipitation events of the wet season (i.e., mid-November 2020); specifically when aquatic features hold greater than three centimeters of water 24 hours after a rain event. Wet season surveys would then continue every 14 days until the aquatic feature dries, or a minimum of 90 consecutive days of inundation have occurred. If pools dry down during the wet season and then inundate again, surveys will be re-initiated for those pools even if the 90 days of inundation have already occurred.

## Dry Season Survey

The dry season surveys will be conducted in accordance with the USFWS *Survey Guidelines for the Listed Large Branchiopods*<sup>5</sup>. Soil samples will be collected from the top centimeter, or one to three centimeters below overburden, of the aquatic features that have the potential to be branchiopod habitat. Soil samples will be collected when they are dry to avoid damaging or destroying cysts. A hand trowel, or similar instrument, will be used to collect approximately one liter volume sample per aquatic feature. Soil samples will be collected in chunks. The soil from each sampling location will be stored in separate bags and labeled with the specific location details from within the aquatic feature from which the sample was taken. A sketch of the aquatic feature

<sup>5</sup> USFWS. May 31, 2015. Survey Guidelines for the Large Listed Branchiopods. United State Department of the Interior. USFWS, Pacific Southwest Region. Accessed September 2020. [https://www.fws.gov/sacramento/es/Survey-Protocols-Guidelines/Documents/VernalPoolBranchiopodSurveyGuidelines\\_20150531.pdf](https://www.fws.gov/sacramento/es/Survey-Protocols-Guidelines/Documents/VernalPoolBranchiopodSurveyGuidelines_20150531.pdf).

showing the specific location of each soil sample location will be drawn. Photographs and field notes of each survey areas physical characteristics will also be recorded.

Per the USFWS guidelines, soil samples will be collected, stored, sieved, and cysts will be identifies as genus *Branchinecta* or *Lepidurus* if possible. Soil samples containing any residual moisture initially will be adequately ventilated and allowed to air dry thoroughly before storage of the sample. The bags containing the soil samples will be kept out of direct sunlight in order to avoid excessively heating the sample.

A total of 10 soil samples of approximately 100 ml each will to be taken from each aquatic feature, for a total soil sample volume of approximately one liter per aquatic feature.

In addition to the dry season survey request, Dudek would also like to request permission to culture/hydrate cysts in the laboratory once soils have been prepared. This will allow for the identification of adult branchiopods to the species-level. Specifically, washed and sieved soil fractions from the 300 um and 150 um sieves will be examined under a dissecting microscope for fairy shrimp or tadpole shrimp cysts. The process will be repeated until all individual soil samples have been examined. All sieved material will be processed and dried as quickly as possible, preferably within one hour from the initial wetting. Cyst density information for each soil sample location will be calculated by dividing the total number of cysts recovered by the total amount of soil from the individual aliquots from that soil sample location. Total cyst density information for each soil sample location will be reported for each species in terms of the following: none; 1 to 25 cysts/100 ml soil; 26 to 50 cysts/100 ml soil; 51 to 100 cysts/100 ml soil; 101 to 199 cysts/100 ml soil; or more than 200 cysts/100 ml soil. If cysts can be identified to the species-level, then one of three methods to determine species will be applied: 1) hydrate and grow them out, though this is not always feasible due to the many factors that go into hatching and growing fairy shrimp; 2) suspend the survey and agree that they are of a listed species; or (3) complete a subsequent wet season survey according to the full protocol. Voucher specimens of adult branchiopods will be preserved, identified to the species level and transferred to an approved repository.

The results of the dry season survey will be documented within a protocol-level report. The report will include a discussion of the survey methodology and adequacy, including a description of any resource documents referenced and field survey methods used during the survey work. The report will include appropriate tables and graphics to meet the reporting requirements of the USFWS. According to USFWS requirements, the report will be submitted within 90 days of completing the survey.

## Wet Season Survey

Protocol-level wet season surveys will also be conducted in accordance with the USFWS guidelines and timing during the wet season as identified above. At each wet season visit, representative portions of the bottom, edges, and vertical water column of the aquatic feature shall be adequately sampled using a seine, dip net or aquarium net appropriate for the size of the feature. As part of the wet season surveys, Dudek will also sample water quality (i.e., pH, total dissolved solids/electro-conductivity, and temperature), and document empirical observations made at each aquatic feature surveyed. Photographs and field notes on each survey areas physical characteristics will be recorded.

The results of the wet season survey will be documented within a protocol-level report. The report will include a discussion of the survey methodology and adequacy, including a description of any resource documents referenced

and field survey methods used during the survey work. The report will include appropriate tables and graphics to meet the reporting requirements of the USFWS. According to USFWS requirements, the report will be submitted within 90 days of completing the survey.

## Survey Personnel

Dudek may employ several of our permitted biologists to conduct wet and dry season surveys in the proposed Project survey area. Each permitted biologist will be accompanied by one or more supporting biological staff that have had appropriate field experience to assist in these surveys. Table 2 below lists all Dudek biologists that hold a Recovery 10(a)(1)(a) Permit, and/or supporting biological field staff that that Dudek has is requesting to have approved to conduct large listed branchiopod surveys in the proposed Project survey area.

**Table 2. Dudek Survey Personnel Reference**

| Name (Title)    | USFWS 10(a)(1)(A) Recovery Permit | Survey Designation       |
|-----------------|-----------------------------------|--------------------------|
| Bergman, Erin   | TE53771B-2                        | Biologist- Lead          |
| Burris, Laura   | N/A                               | Field Biologist- Support |
| Godinho, Anna   | N/A                               | Field Biologist- Support |
| Henry, Ryan     | TE031848-4                        | Biologist- Lead          |
| Henry, Michael  | N/A                               | Field Biologist- Support |
| Keating, Paul   | N/A                               | Field Biologist- Support |
| Kennedy, Morgan | N/A                               | Field Biologist- Support |
| Leis, Michelle  | N/A                               | Field Biologist- Support |
| Lemons, Paul    | TE051248-6                        | Biologist- Lead          |
| Moine, Heather  | TE60147A-1                        | Biologist- Lead          |
| Ortega, Brock   | TE813545-9                        | Biologist- Lead          |
| Scricca, Emily  | N/A                               | Field Biologist- Support |
| Sennett, Allie  | N/A                               | Field Biologist- Support |

If you have any questions regarding this request, please feel free to contact me anytime at morgkennedy@gmail.com, 916.661.2498. Thank you for your consideration.

Sincerely,



Morgan Kennedy  
Environmental Compliance Manager

Att.: 1) Figure 1. Project Location Map  
2) Figure 2. Project Survey Area Map  
3) Figure 3. Project Area and Preliminary Survey Location Map

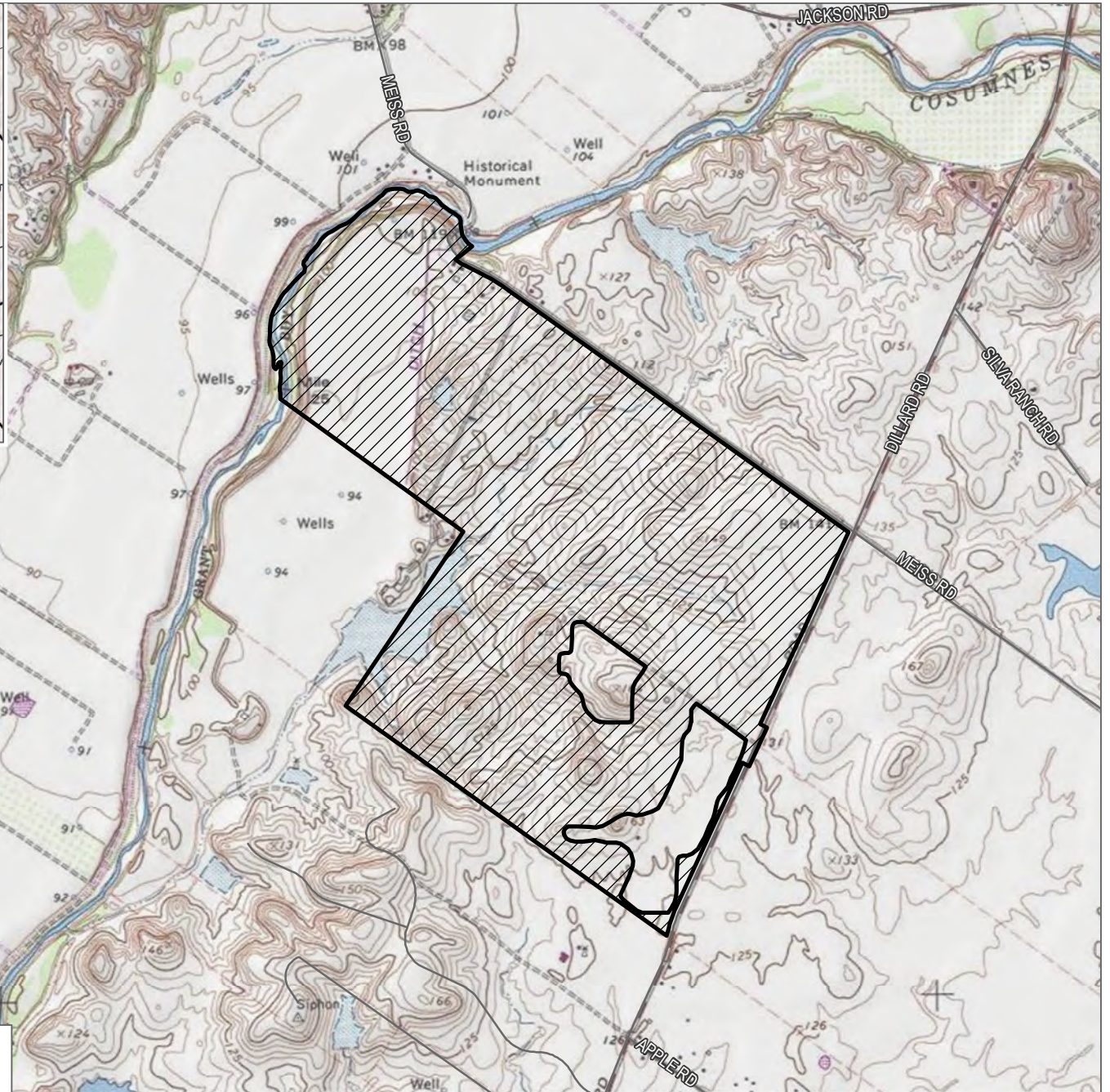
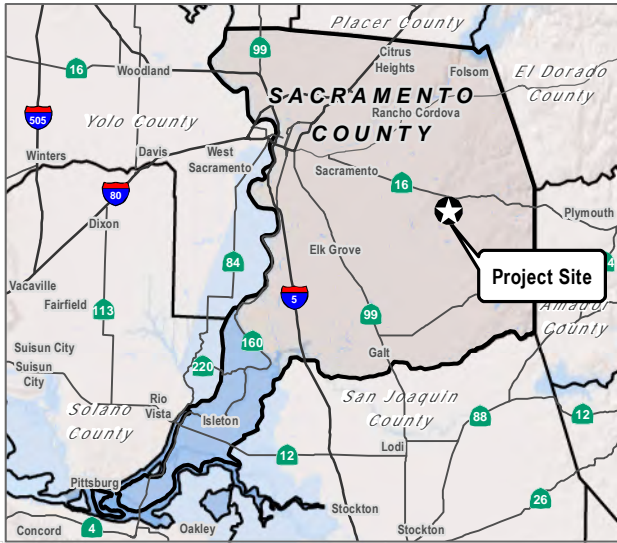




# Attachment 1

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Figure 1. Project Location Map



 Project Study Area Boundary (742.44 acres)

SOURCE: USGS 7.5-Minute Series Sloughouse Quadrangle

**DUDEK**



0 1,000 2,000  
Feet  
1:24,000  
NAD1983, CA State Plane Zone II

**FIGURE 1**

**Project Location Map**

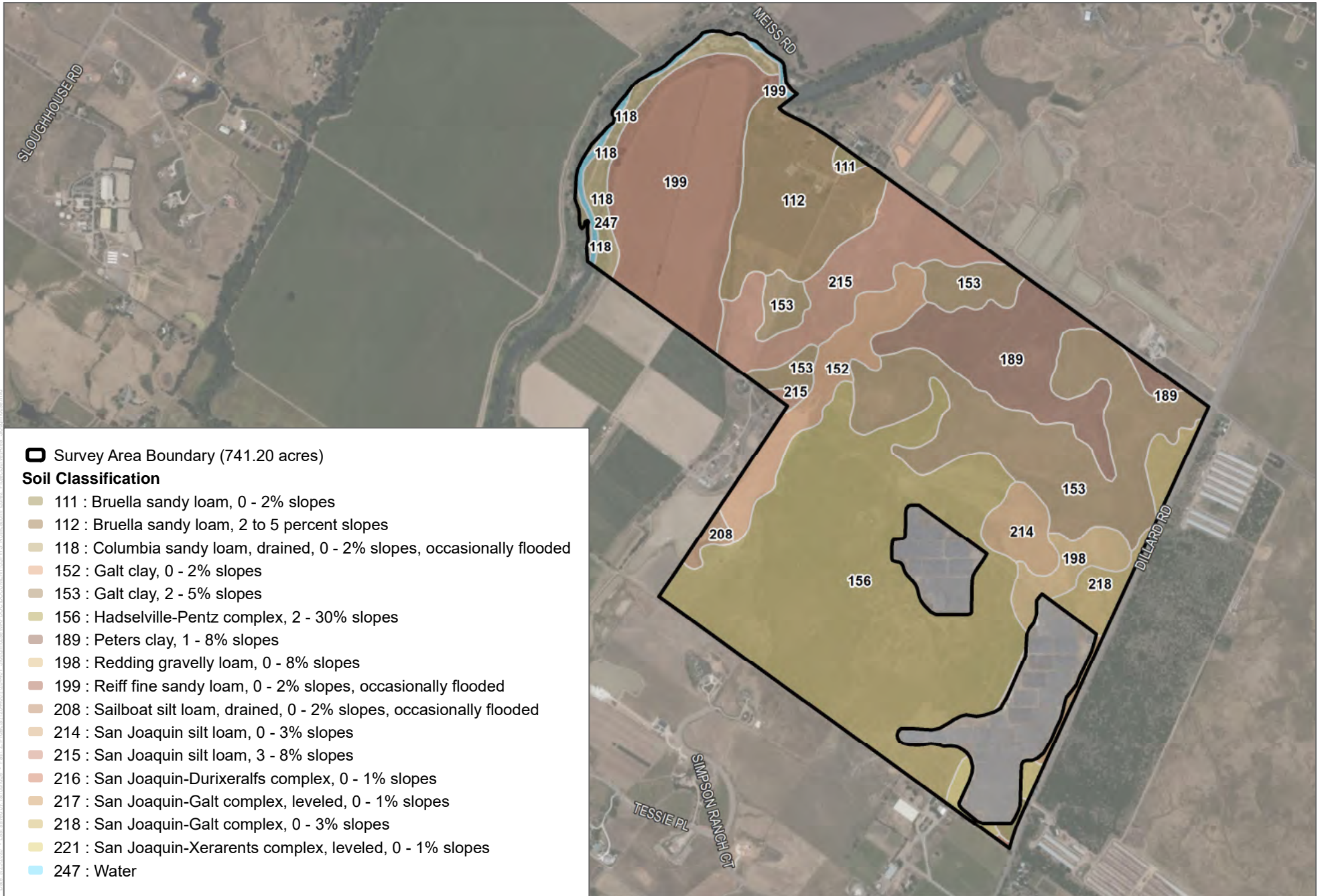


# Attachment 2

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Figure 2. Project Survey Area Map





SOURCE: Bing Maps 2019, USDA 2019, Sacramento County

**DUDEK**



Sloughhouse Project (Category: Other) - USFWS Listed Large Branchiopod Survey Notification, City of Sloughhouse, Sacramento County

**FIGURE 2**

**Project Survey Area Map**



# Attachment 3

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Figure 3. Project Area and Preliminary Survey Locations Map





SOURCE: Bing Maps 2019, SFEI CARI 2019, NWI 2019, Sacramento County

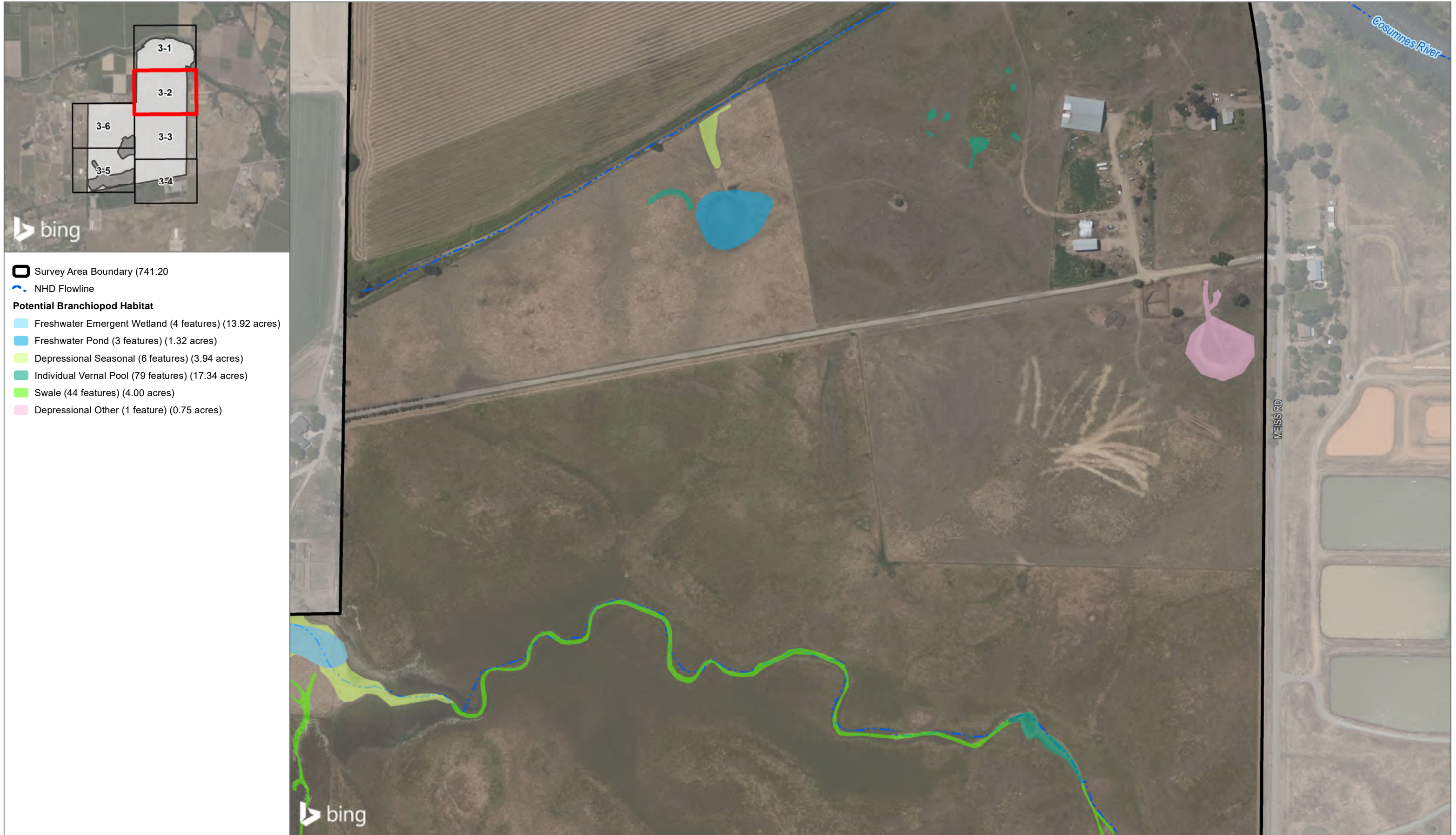
**DUDEK** 1:3,300 Feet  
 NAD1983, CA State Plane Zone II

**FIGURE 3-1**

Project Area and Preliminary Survey Locations Map

Sloughouse Project (Category: Other) - USFWS Listed Large Branchiopod Survey Notification, City of Sloughouse, Sacramento County





SOURCE: Bing Maps 2019, SFEI CARI 2019, NWI 2019, Sacramento County

**DUDEK**

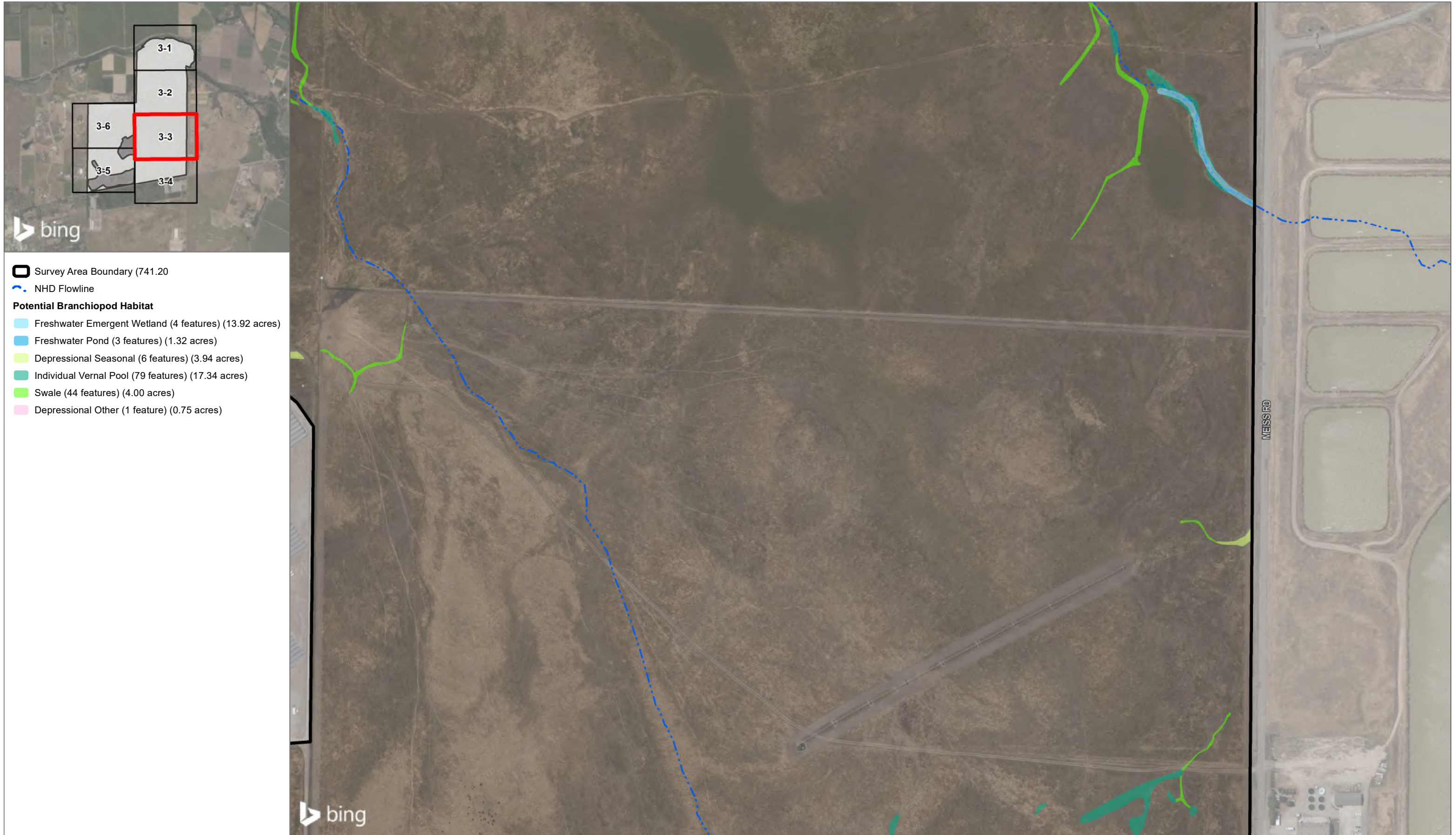
0 137.5 275 Feet  
1:3,300  
NAD1983, CA State Plane Zone II

**FIGURE 3-2**

**Project Area and Preliminary Survey Locations Map**

Sloughouse Project (Category: Other) - USFWS Listed Large Branchiopod Survey Notification, City of Sloughouse, Sacramento County



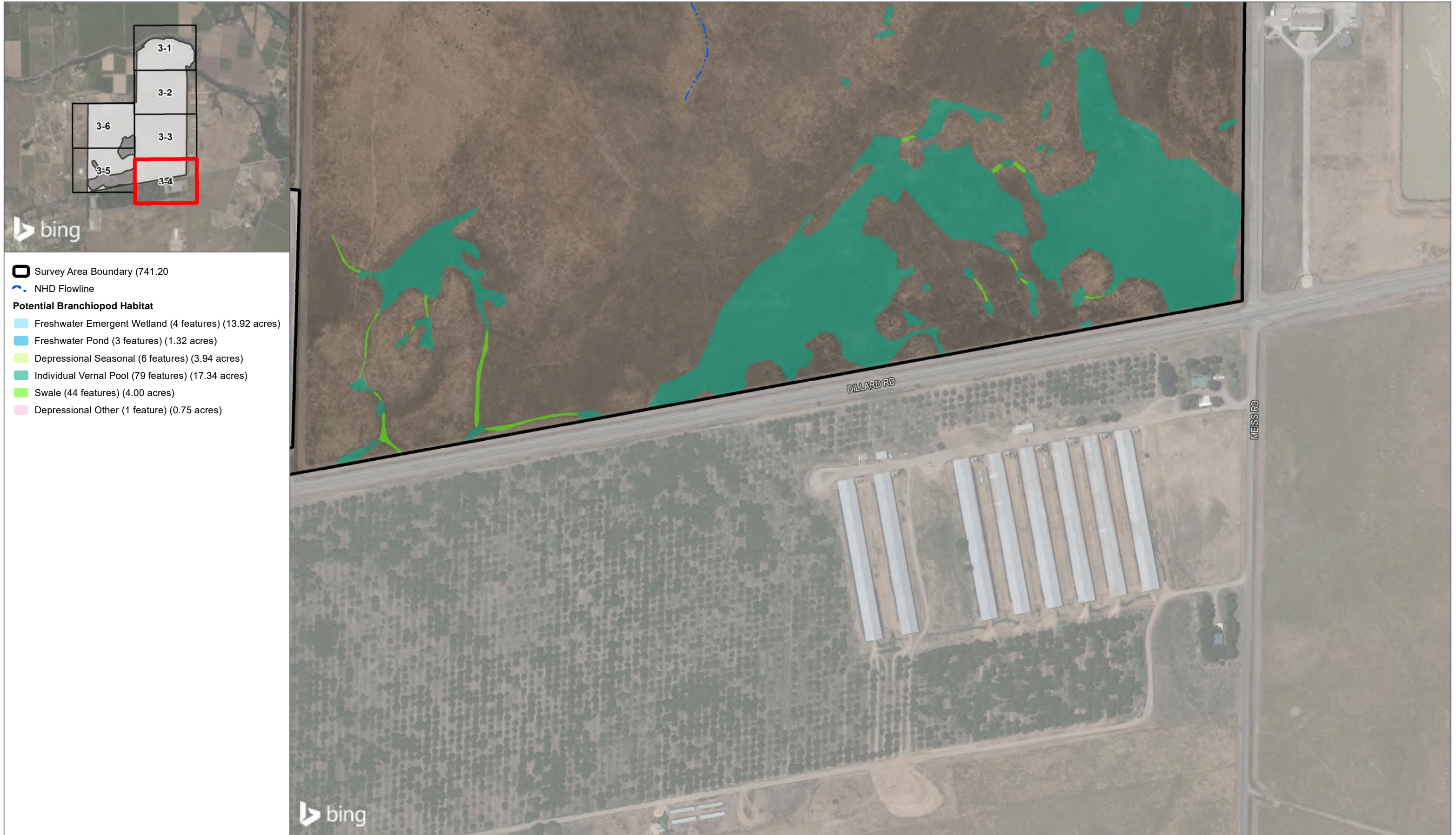


SOURCE: Bing Maps 2019, SFEI CARI 2019, NWI 2019, Sacramento County

**FIGURE 3-3**

**Project Area and Preliminary Survey Locations Map**





- Survey Area Boundary (741.20)
- ~ NHD Flowline
- Potential Branchiopod Habitat**
- Freshwater Emergent Wetland (4 features) (13.92 acres)
- Freshwater Pond (3 features) (1.32 acres)
- Depressional Seasonal (6 features) (3.94 acres)
- Individual Vernal Pool (79 features) (17.34 acres)
- Swale (44 features) (4.00 acres)
- Depressional Other (1 feature) (0.75 acres)

SOURCE: Bing Maps 2019, SFEI CARI 2019, NWI 2019, Sacramento County

**DUDEK**

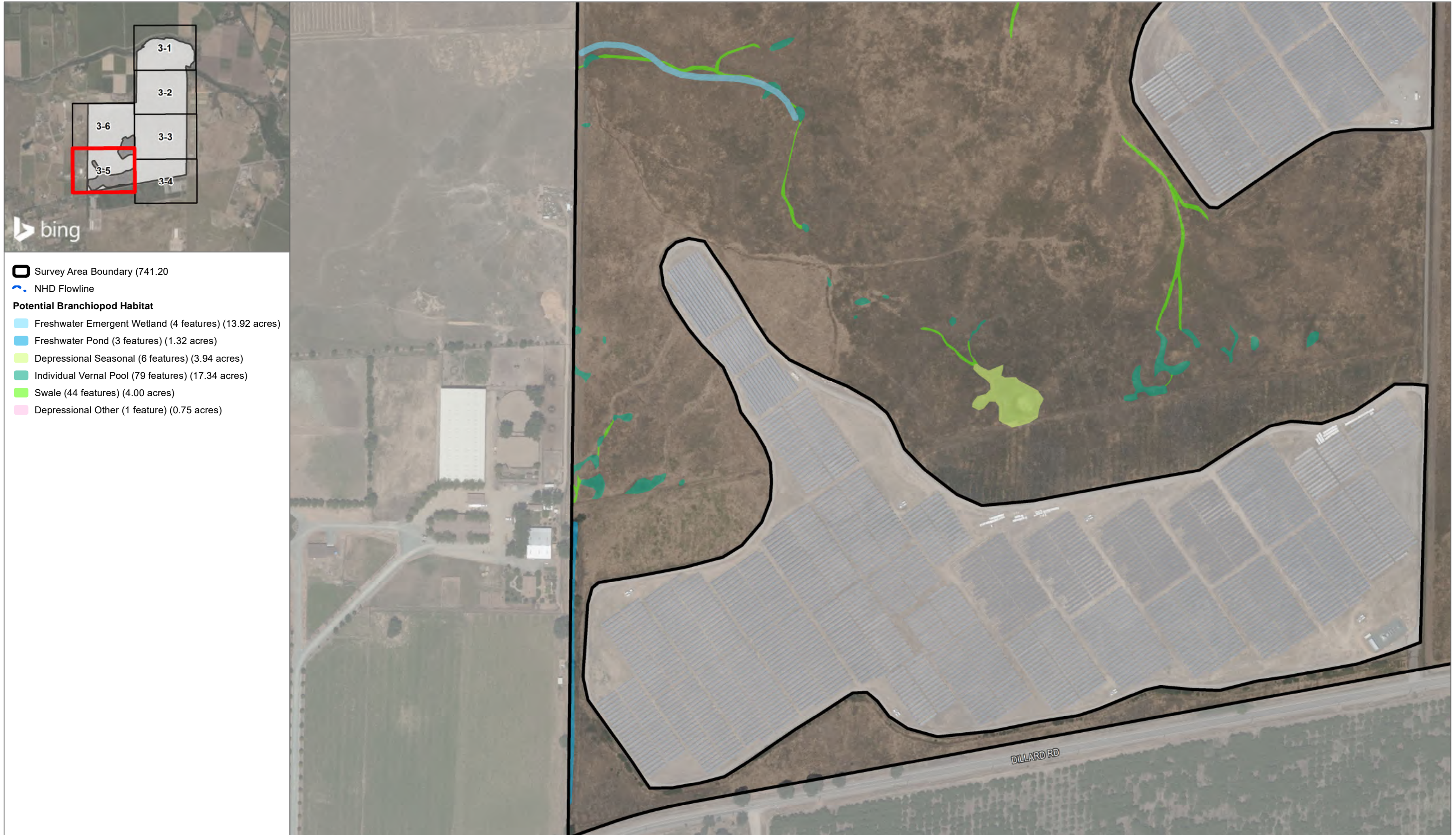
0 137.5 275 Feet  
1:3,300  
NAD1983, CA State Plane Zone II

**FIGURE 3-4**

Project Area and Preliminary Survey Locations Map

Sloughouse Project (Category: Other) - USFWS Listed Large Branchiopod Survey Notification, City of Sloughouse, Sacramento County





SOURCE: Bing Maps 2019, SFEI CARI 2019, NWI 2019, Sacramento County

**DUDEK**

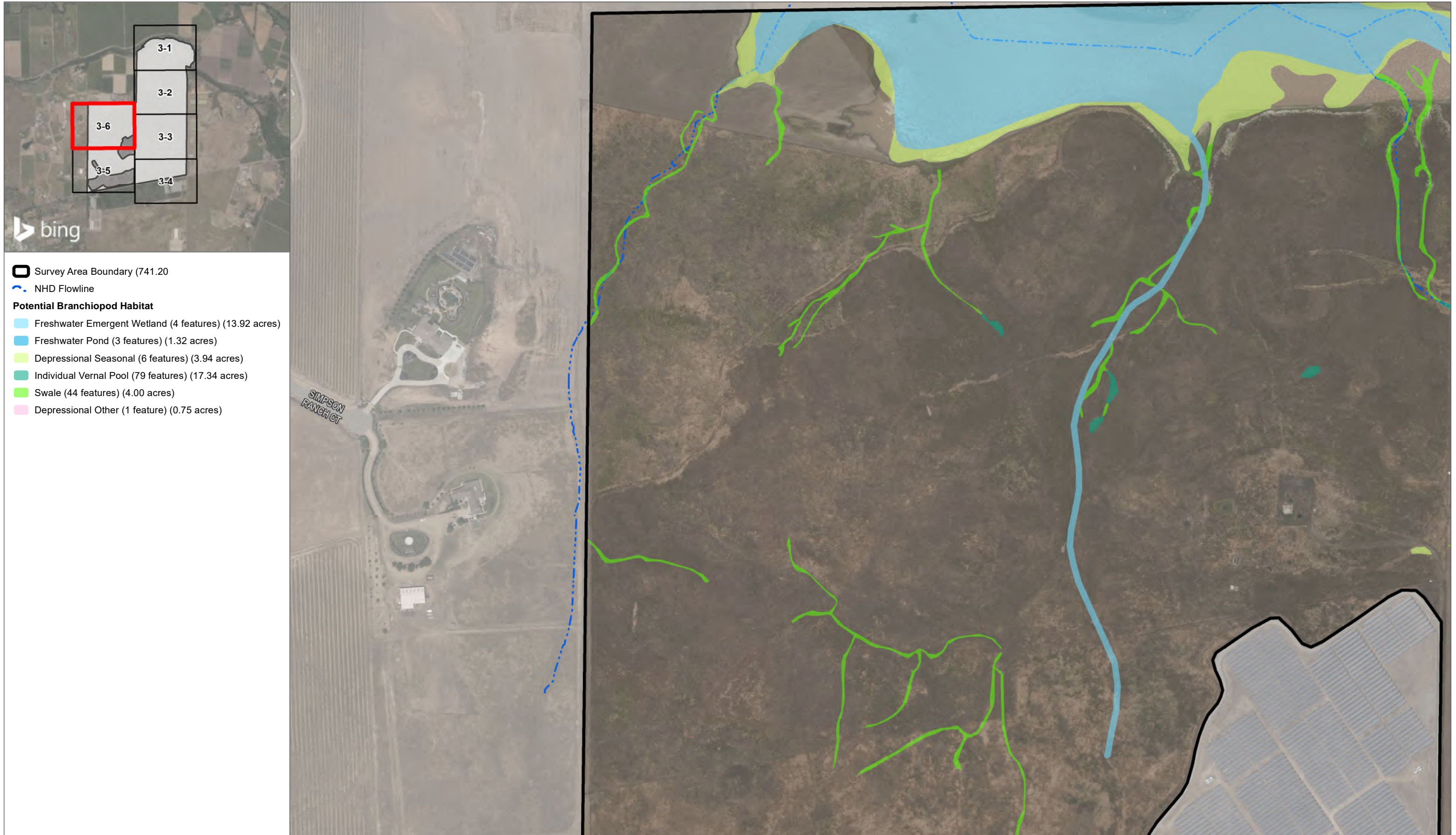
1:3,300  
NAD1983, CA State Plane Zone II

**FIGURE 3-5**

Project Area and Preliminary Survey Locations Map

Sloughouse Project (Category: Other) - USFWS Listed Large Branchiopod Survey Notification, City of Sloughouse, Sacramento County





SOURCE: Bing Maps 2019, SFEI CARI 2019, NWI 2019, Sacramento County

**DUDEK**

1:3,300  
NAD1983, CA State Plane Zone II

**FIGURE 3-6**

Project Area and Preliminary Survey Locations Map

Sloughouse Project (Category: Other) - USFWS Listed Large Branchiopod Survey Notification, City of Sloughouse, Sacramento County

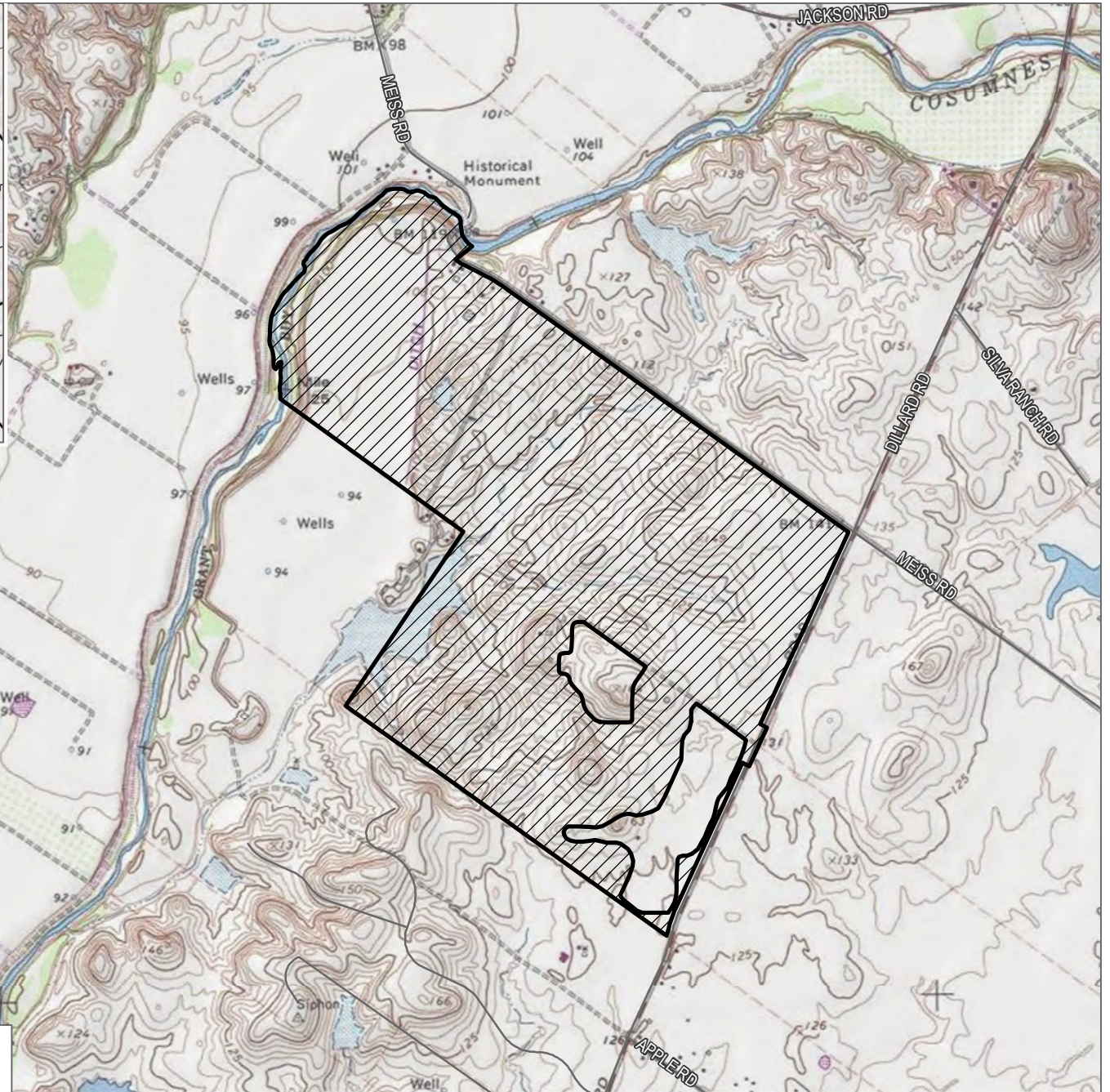
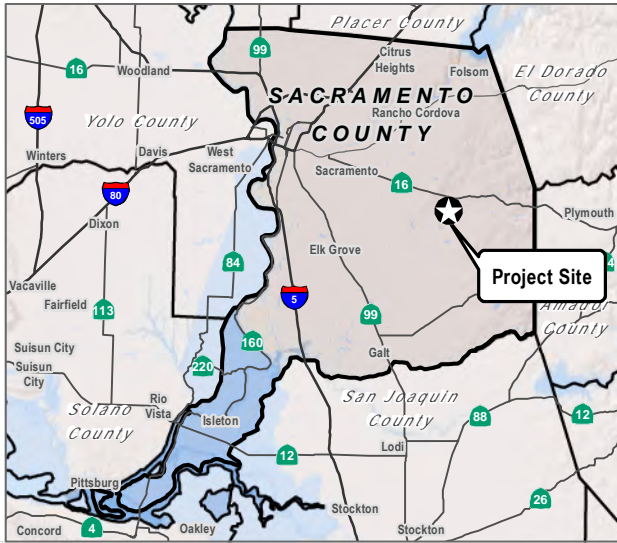


# Attachment B

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Figure 1- Project Location

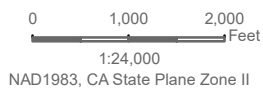




 Project Study Area Boundary (742.44 acres)

SOURCE: USGS 7.5-Minute Series Sloughouse Quadrangle

**DUDEK**



**FIGURE 1**

**Project Location Map**

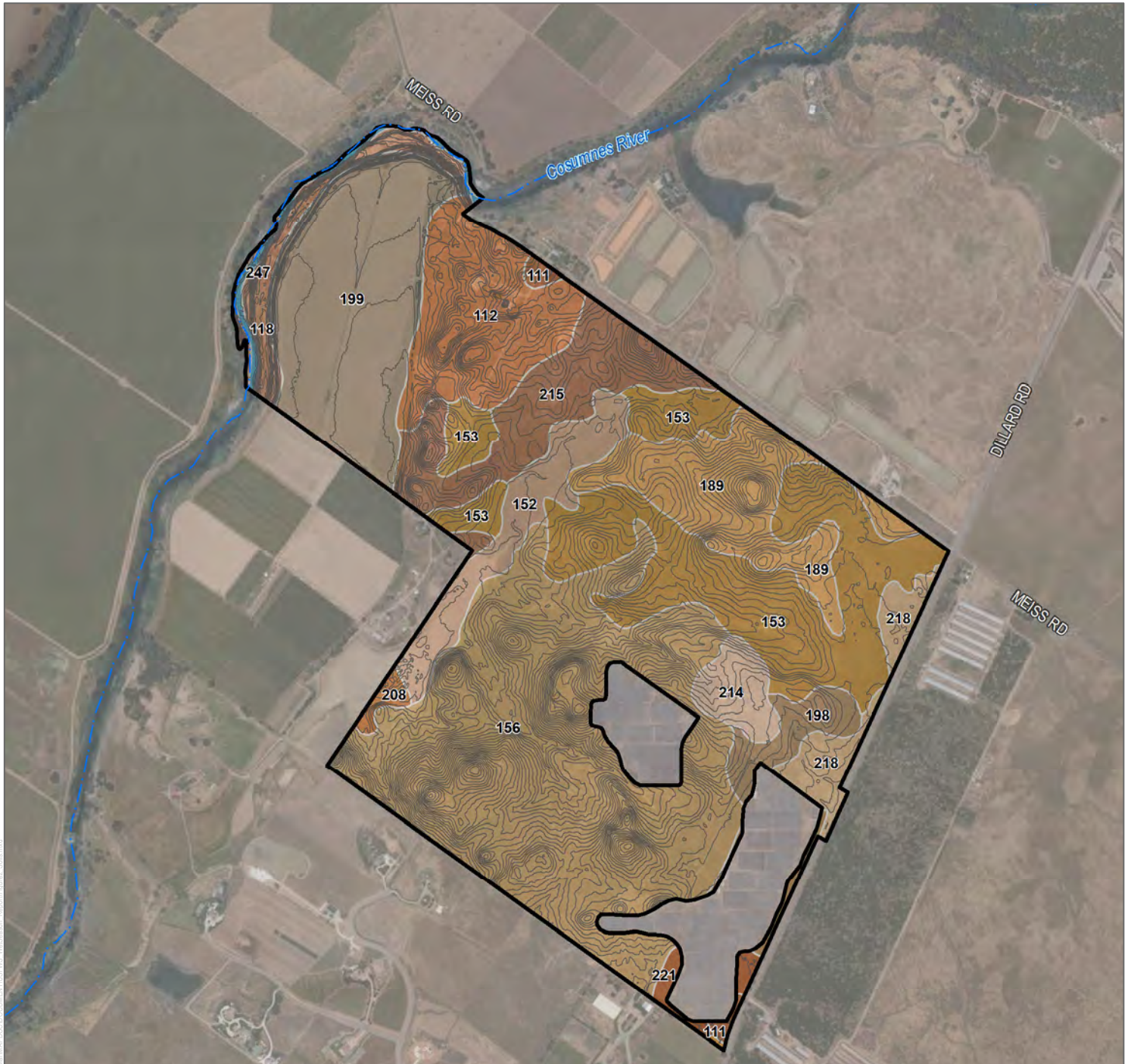


# Attachment C

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Figure 2- Project Soils





Project Study Area Boundary (742.44 acres)

NHD Flowline

2-foot Contours

**Soil Classification**

- 111 : Bruella sandy loam, 0-2% slopes
- 112 : Bruella sandy loam, 2-5% slopes
- 118 : Columbia sandy loam, drained, 0-2% slopes, occasionally flooded
- 152 : Galt clay, 0-2% slopes
- 153 : Galt clay, 2-5% slopes
- 156 : Hadselville-Pentz complex, 2-30% slopes
- 189 : Peters clay, 1-8% slopes

- 198 : Redding gravelly loam, 0-8% slopes
- 199 : Reiff fine sandy loam, 0-2% slopes, occasionally flooded
- 208 : Sailboat silt loam, drained, 0-2% slopes, occasionally flooded
- 214 : San Joaquin silt loam, 0-3% slopes
- 215 : San Joaquin silt loam, 0-8% slopes
- 216 : San Joaquin-Durixeralfs complex, 0-1% slopes
- 217 : San Joaquin-Galt complex, leveled, 0-1% slopes
- 218 : San Joaquin-Galt complex, 0-3% slopes
- 221 : San Joaquin-Xerarents complex, leveled, 0-1% slopes
- 247 : Water

SOURCE: Bing Maps 2020, Sacramento County 2019, USDA 2019



**FIGURE 2**  
Project Soils

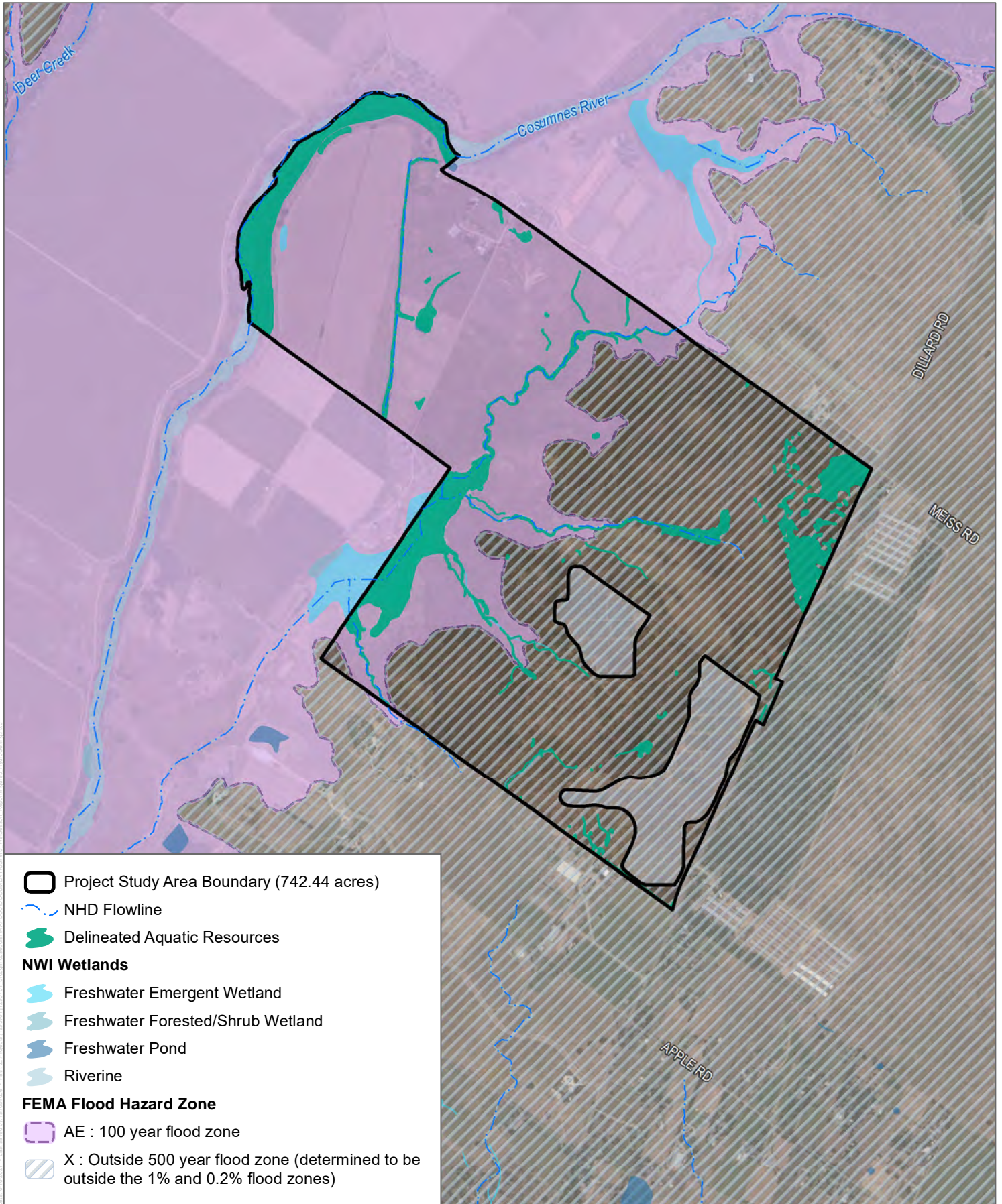


# Attachment D

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Figure 3- Project Hydrology





SOURCE: Bing Maps 2020, NHD 2019, Sacramento County 2019, USFWS 2020, FEMA 2019

**FIGURE 3**

**Project Hydrology**



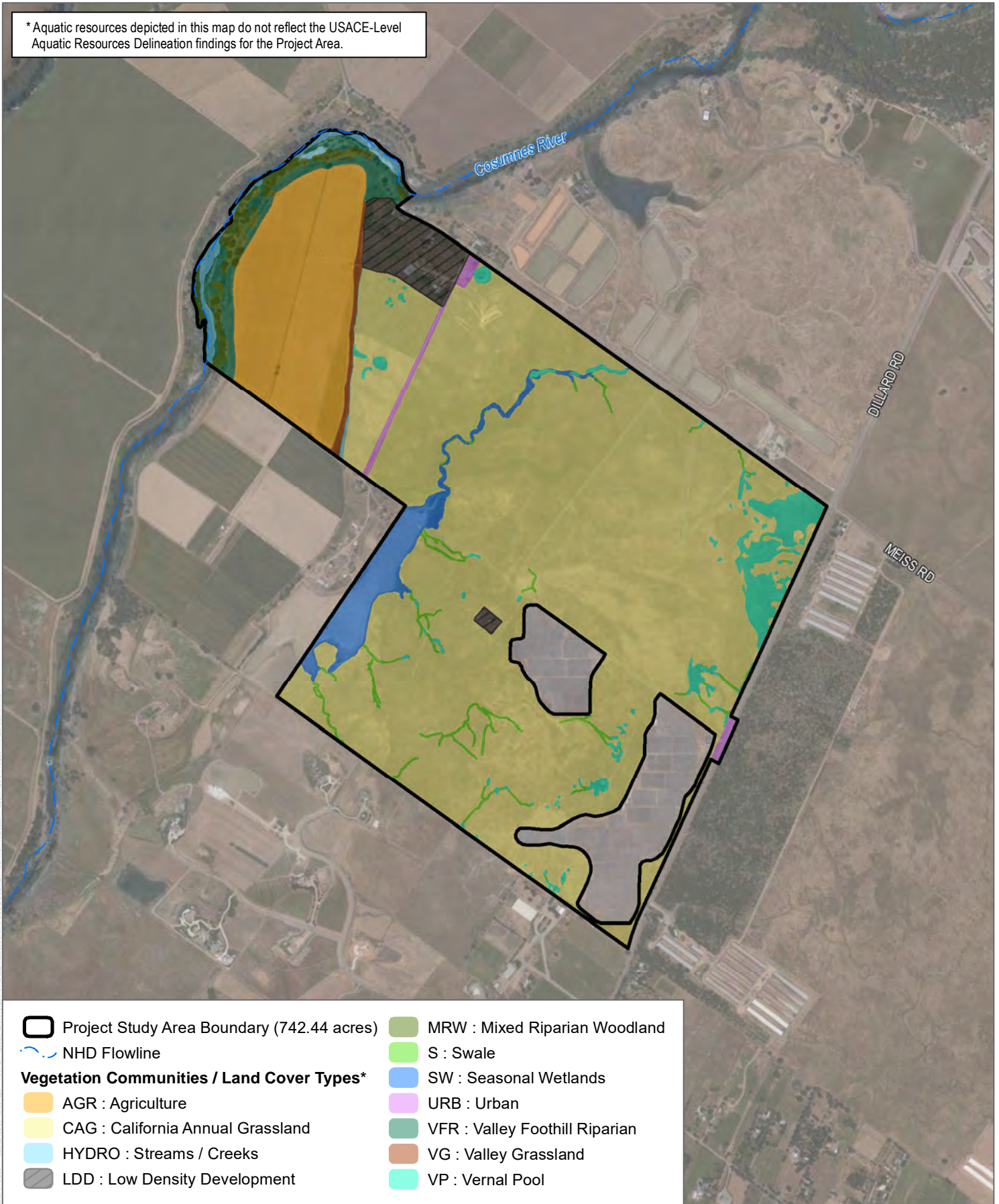
# Attachment E

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Figure 4- Project Vegetation Communities and Land Cover



\*Aquatic resources depicted in this map do not reflect the USACE-Level Aquatic Resources Delineation findings for the Project Area.



SOURCE: Bing Maps 2020, Sacramento County 2019, SSHCP 2014

**FIGURE 4**

**Project Vegetation Communities and Land Cover**

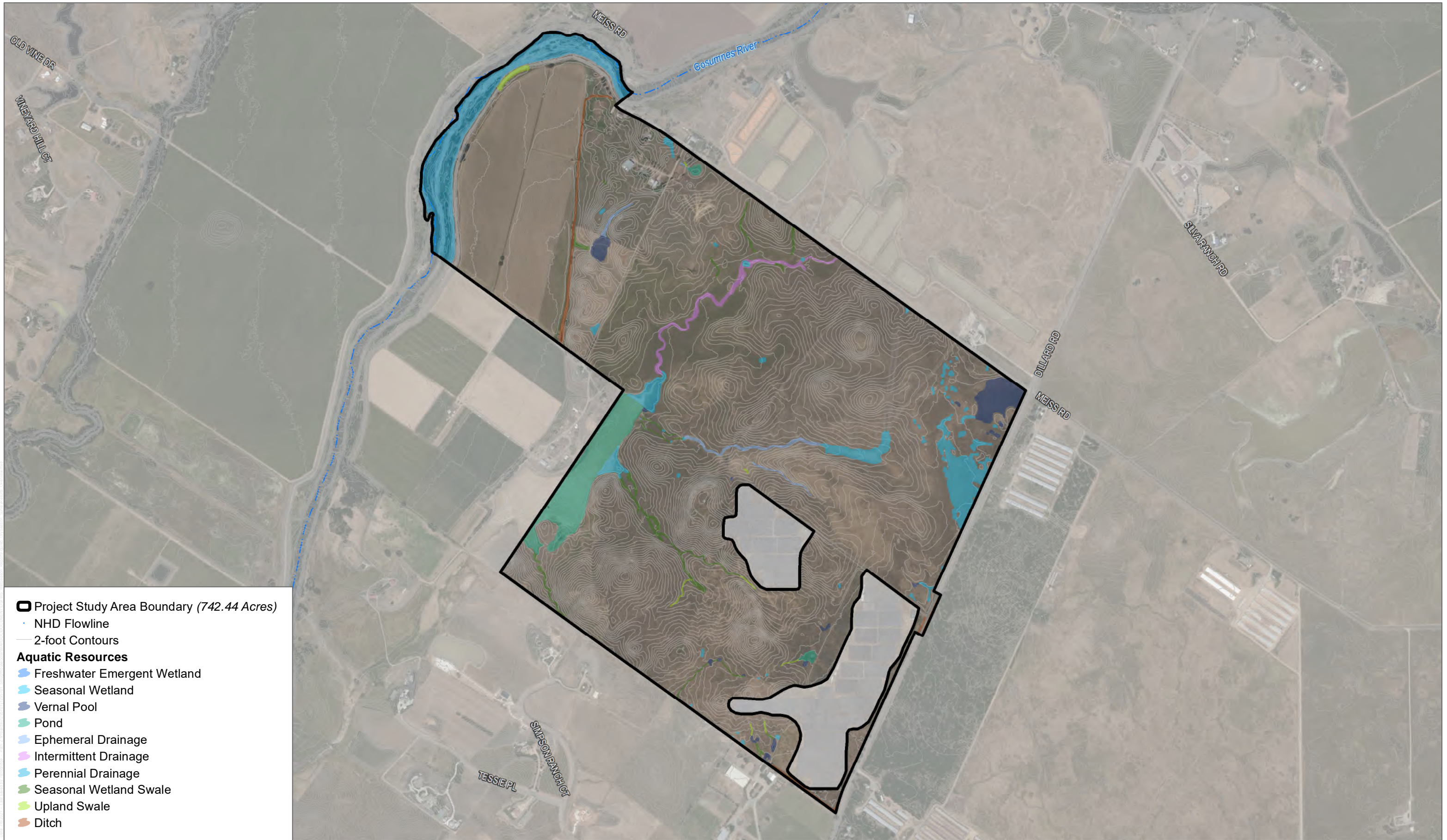


# Attachment F

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Figure 5- USFWS Wet Season Protocol Survey Results for Federally Listed Branchiopods





- Project Study Area Boundary (742.44 Acres)
- NHD Flowline
- 2-foot Contours
- Aquatic Resources**
- Freshwater Emergent Wetland
- Seasonal Wetland
- Vernal Pool
- Pond
- Ephemeral Drainage
- Intermittent Drainage
- Perennial Drainage
- Seasonal Wetland Swale
- Upland Swale
- Ditch

SOURCE: Bing Maps 2020, Sacramento County 2019



FIGURE 5

USFWS Wet Season Protocol Survey Results for Federally Listed Branchiopods

Sloughhouse Solar Farm Project (Category: Other) - USFWS Wet Season Survey Report, Sacramento County, CA





SOURCE: Bing Maps 2020, Sacramento County 2019

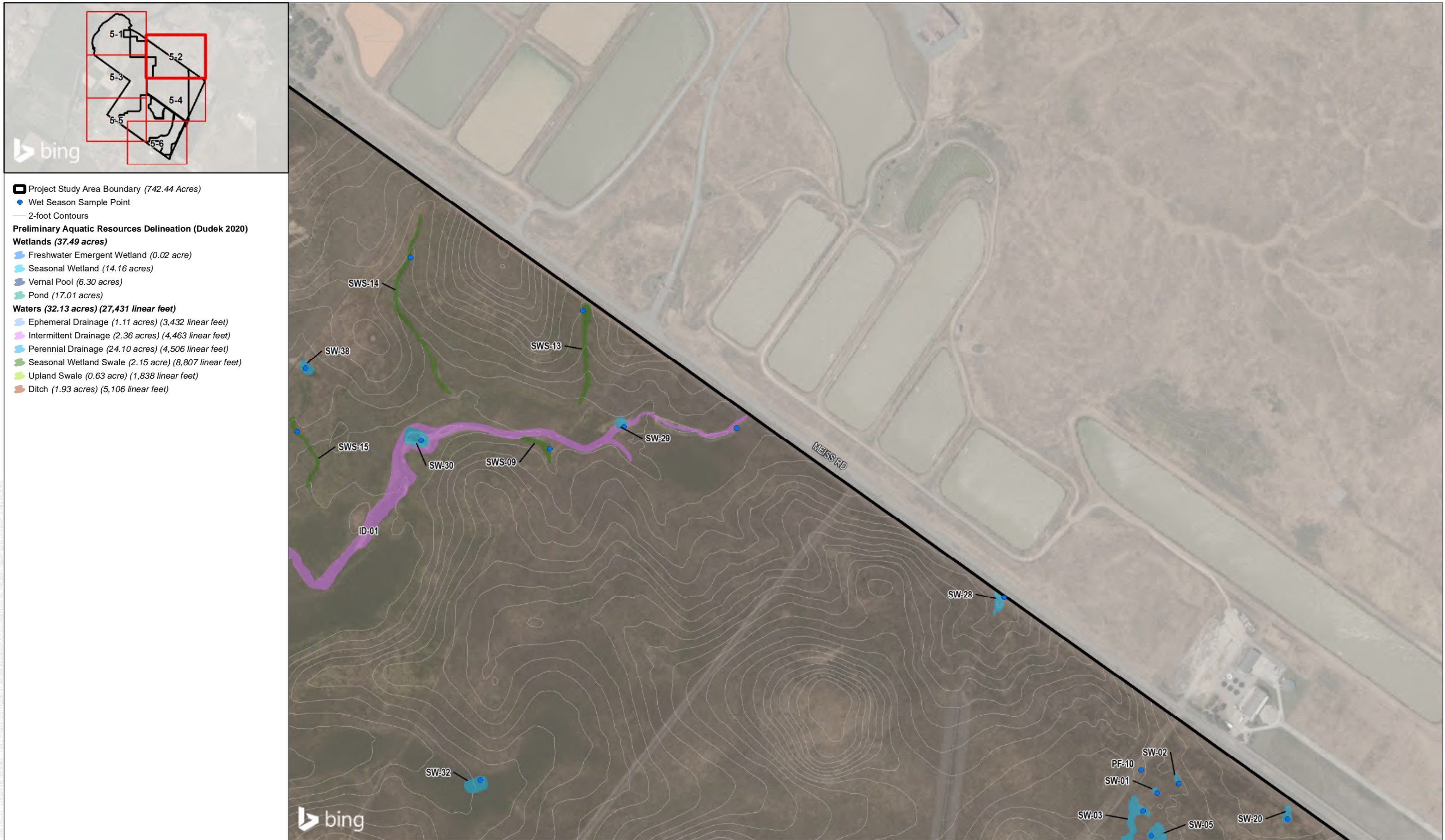


FIGURE 5-1

USFWS Wet Season Protocol Survey Results for Federally Listed Branchiopods

Sloughhouse Solar Farm Project (Category: Other) - USFWS Wet Season Survey Report, Sacramento County, CA





SOURCE: Bing Maps 2020, Sacramento County 2019



FIGURE 5-2

USFWS Wet Season Protocol Survey Results for Federally Listed Branchiopods

Sloughouse Solar Farm Project (Category: Other) - USFWS Wet Season Survey Report, Sacramento County, CA





- Project Study Area Boundary (742.44 Acres)
- Wet Season Sample Point
- 2-foot Contours
- Preliminary Aquatic Resources Delineation (Dudek 2020)**
- Wetlands (37.49 acres)**
- Freshwater Emergent Wetland (0.02 acre)
- Seasonal Wetland (14.16 acres)
- Vernal Pool (6.30 acres)
- Pond (17.01 acres)
- Waters (32.13 acres) (27,431 linear feet)**
- Ephemeral Drainage (1.11 acres) (3,432 linear feet)
- Intermittent Drainage (2.36 acres) (4,463 linear feet)
- Perennial Drainage (24.10 acres) (4,506 linear feet)
- Seasonal Wetland Swale (2.15 acre) (8,807 linear feet)
- Upland Swale (0.63 acre) (1,838 linear feet)
- Ditch (1.93 acres) (5,106 linear feet)

SOURCE: Bing Maps 2020, Sacramento County 2019

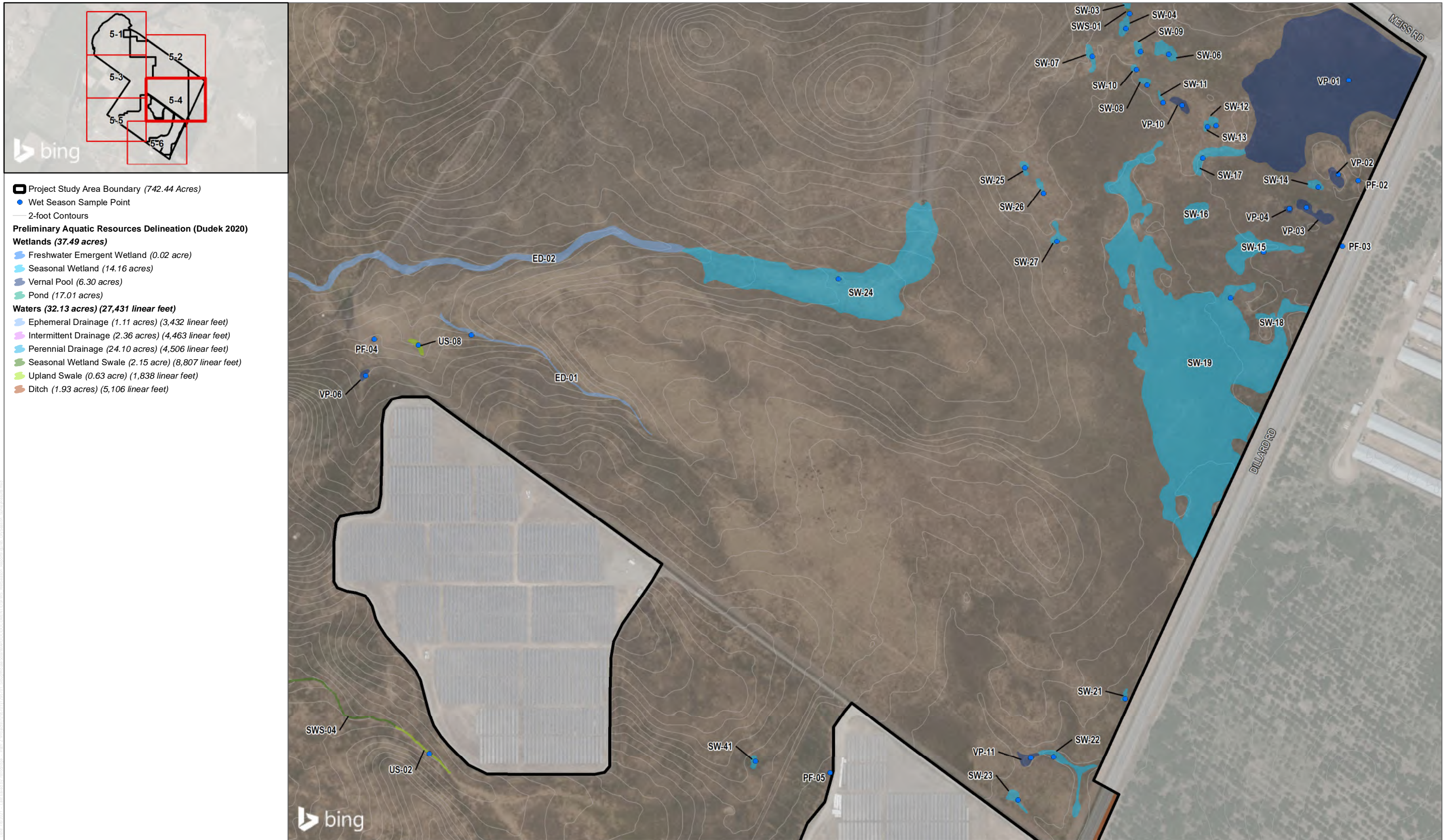


FIGURE 5-3

USFWS Wet Season Protocol Survey Results for Federally Listed Branchiopods

Sloughhouse Solar Farm Project (Category: Other) - USFWS Wet Season Survey Report, Sacramento County, CA

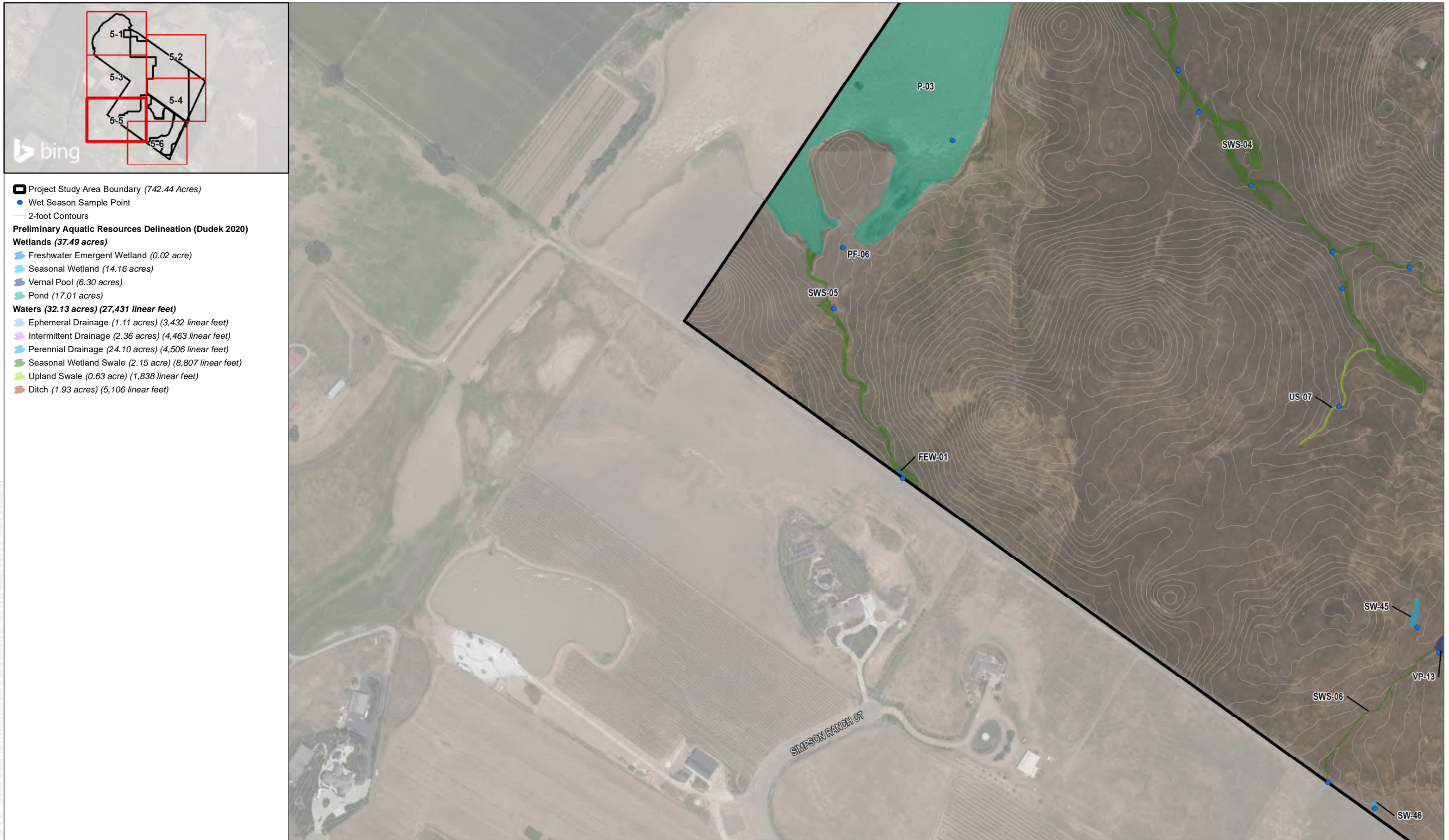




SOURCE: Bing Maps 2020, Sacramento County 2019

**FIGURE 5-4**





SOURCE: Bing Maps 2020, Sacramento County 2019

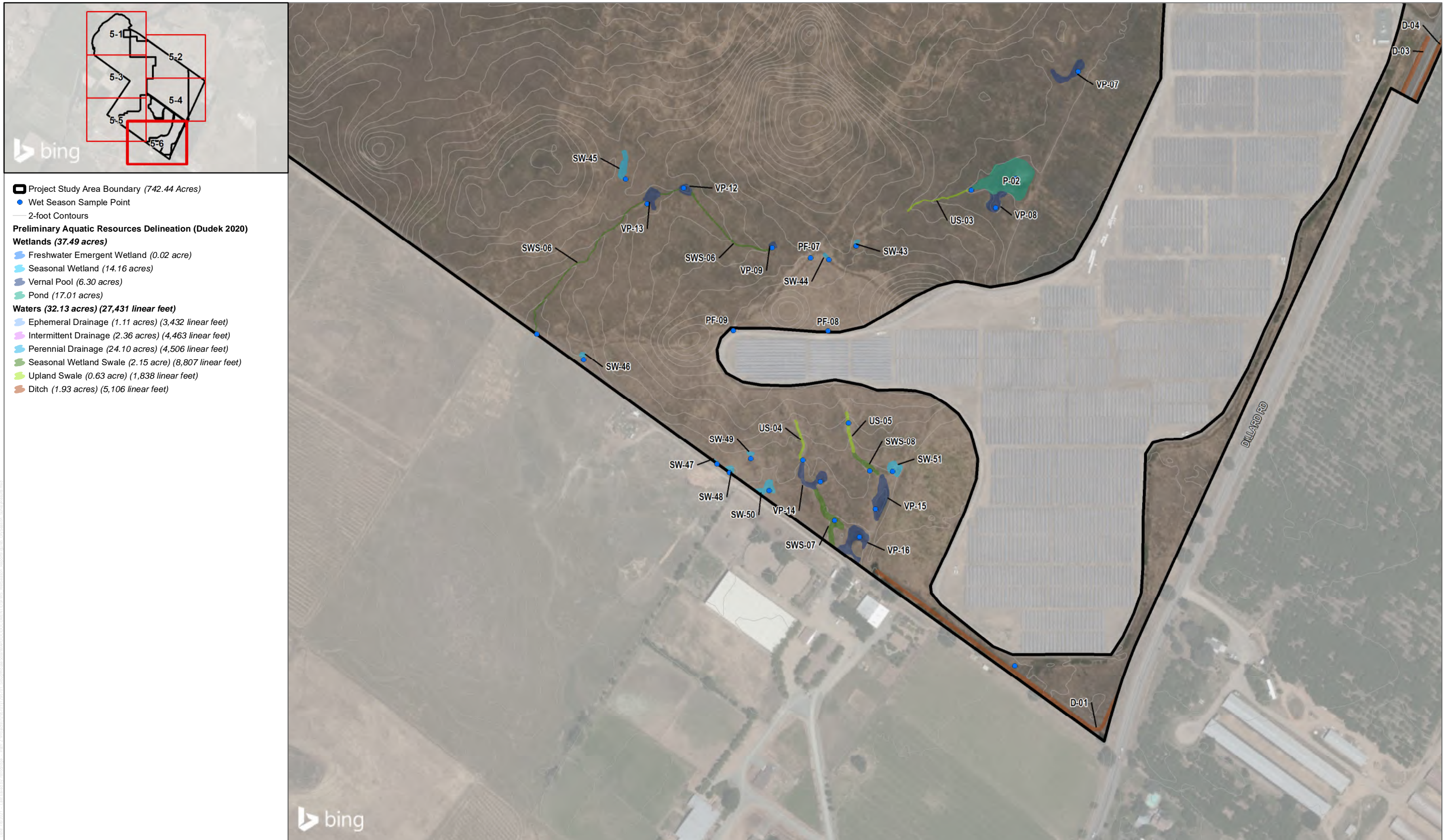


FIGURE 5-5

USFWS Wet Season Protocol Survey Results for Federally Listed Branchiopods

Sloughhouse Solar Farm Project (Category: Other) - USFWS Wet Season Survey Report, Sacramento County, CA





SOURCE: Bing Maps 2020, Sacramento County 2019



**FIGURE 5-6**  
 USFWS Wet Season Protocol Survey Results for Federally Listed Branchiopods  
 Sloughhouse Solar Farm Project (Category: Other) - USFWS Wet Season Survey Report, Sacramento County, CA





# Attachment G

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Photo Record





**Photo 1:** Representative photo of seasonal wetland in the Project study area



**Photo 2:** Representative photo of ephemeral drainage in the Project study area



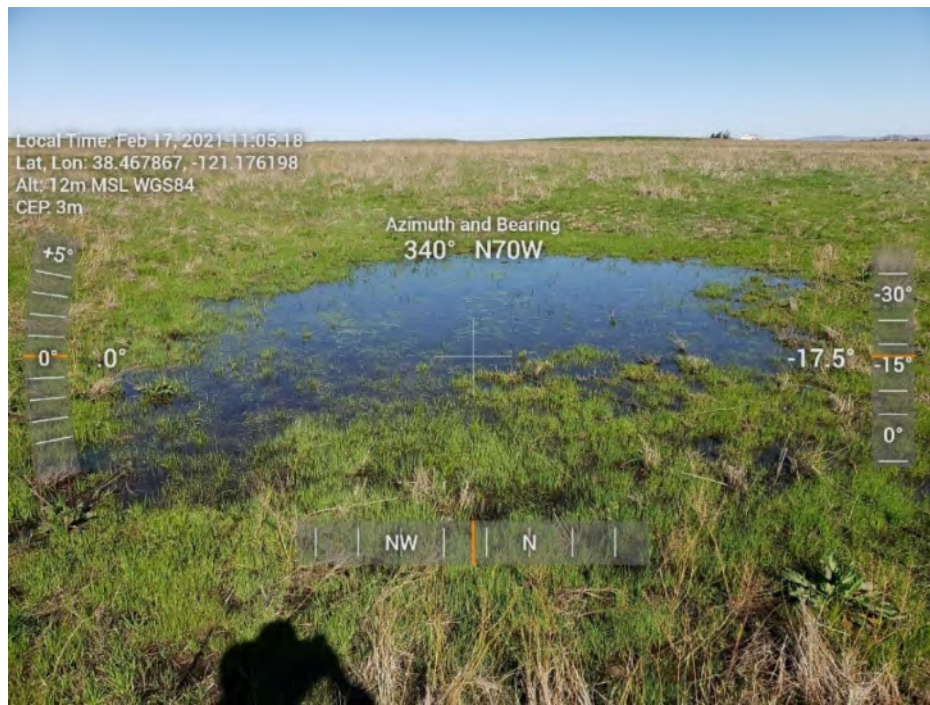


**Photo 3:** Representative photo of seasonal wetland swale in the Project study area



**Photo 4:** Representative photo of upland swale in the Project study area





**Photo 5:** Representative photo of vernal pool in the Project study area



**Photo 6:** Representative photo of ditch in the Project study area



# Attachment H

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USFWS Wet Season Protocol Survey Results for Federally Listed  
Branchiopods – Datasheets



ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition       |                         |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|-------------------------|-------------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                         | Diptera Chironomidae    |
| D-01                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear              | D-01         | 4258541        | 658729        | 0           | 0          | 0.0          | 0.0           | 0                    | 965       |             |              |          |           |           |            |           |                   |                            |                         | Grassland-D: T; UG      |
| D-01                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | D-01         | 4258541        | 658729        | 0           | 0          | 0            | 0             | 0                    | 965       |             |              |          |           |           |            |           |                   |                            |                         | Grassland-D: T; UG      |
| D-01                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | D-01         | 4258541        | 658729        | 0           | 0          | 0            | 0             | 0                    | 965       |             |              |          |           |           |            |           |                   |                            |                         | Grassland-D: T; UG      |
| D-01                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | D-01         | 4258541        | 658729        | 0           | 0          | 0            | 0             | 0                    | 965       |             |              |          |           |           |            |           |                   |                            |                         | Grassland-D: T; UG      |
| D-01                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear              | D-01         | 4258541        | 658729        | 0           | 0          | 0            | 0             | 0                    | 965       |             |              |          |           |           |            |           |                   |                            |                         | Grassland-D: T; UG      |
| D-01                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/15/2021 | 0800-1700 | Clear              | D-01         | 4258541        | 658729        | 0           | 0          | 0            | 0             | 0                    | 965       |             |              |          |           |           |            |           |                   |                            |                         | Grassland-D: T; UG      |
| D-01                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/29/2021 | 0800-1700 | Clear              | D-01         | 4258541        | 658729        | 0           | 0          | 0            | 0             | 0                    | 965       |             |              |          |           |           |            |           |                   |                            |                         | Grassland-D: T; UG      |
| D-02                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear              | D-02         | 4260535        | 657818        | 16.0        | 16.0       | 5.1          | 25.4          | 100.0                | 6,221     |             |              |          |           |           |            |           |                   |                            |                         | Grassland-D: T; G: C-HG |
| D-02                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | D-02         | 4260535        | 657818        | 17.0        | 10.0       | 14.0         | 30.0          | 600.0                | 6,221     |             |              |          |           |           |            | x         | x                 |                            | Grassland-D: T; G: C-HG |                         |
| D-02                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | D-02         | 4260535        | 657818        | 18.4        | 17.4       | 10.0         | 24.0          | 20.0                 | 6,221     |             |              |          | x         |           |            |           |                   | x                          | Grassland-D: T; G: C-HG |                         |
| D-02                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | D-02         | 4260535        | 657818        | 16.4        | 15.4       | 35.0         | 60.0          | 1,000.0              | 6,221     | LIOC        |              |          | x         | x         | x          |           |                   |                            | Grassland-D: T; G: C-HG |                         |
| D-02                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | D-02         | 4260535        | 657818        | 25.6        | 24.5       | 35.0         | 50.0          | 800.0                | 6,221     | LIOC        |              |          | x         | x         |            | x         |                   | x                          | Grassland-D: T; G: C-HG |                         |
| D-02                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | D-02         | 4260535        | 657818        | 19.9        | 19.8       | 30.0         | 50.0          | 500.0                | 6,221     |             |              |          | x         | x         | x          | x         |                   |                            | Grassland-D: T; G: C-HG |                         |
| D-02                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | D-02         | 4260535        | 657818        | 27.1        | 30.8       | 30.0         | 40.0          | 210.0                | 6,221     |             |              |          | x         | x         |            | x         |                   |                            | Grassland-D: T; G: C-HG |                         |

|      |                             |     |                             |      |                                 |    |                  |      |                           |    |              |
|------|-----------------------------|-----|-----------------------------|------|---------------------------------|----|------------------|------|---------------------------|----|--------------|
| C    | cattle                      | ED  | ephemeral drainage          | HG   | heavy grazing                   | MG | moderate grazing | PSRE | <i>Pseudacris regilla</i> | TT | tire tracks  |
| CYCA | <i>Cyzicus californicus</i> | FEW | freshwater emergent wetland | ID   | intermittent drainage           | P  | pond             | SW   | seasonal wetland          | UG | ungrazed     |
| D    | ditch                       | G   | grazed                      | LG   | light grazing                   | P  | plowed           | SWS  | seasonal wetland swale    | US | upland swale |
| D    | disturbed                   | H   | horse                       | LIOC | <i>Linderiella occidentalis</i> | PF | ponded feature   | T    | trash                     | VP | vernal pool  |

ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   |                      | Platyhelminths (flatworms) | Habitat Condition  |                    |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------|----------------------------|--------------------|--------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae | Diptera Chironomidae |                            |                    |                    |
| ED-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Cloudy             | ED-01        | 4259744        | 658532        | 10.0        | 9.0        | 7.6          | 10.2          | 3.0                  | 286       |             |              |          |           |           |            |           |                   |                      |                            |                    | Grassland-G: C- HG |
| ED-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | ED-01        | 4259744        | 658532        | 16.1        | 16.6       | 4.0          | 7.0           | 3.0                  | 286       |             |              |          |           |           |            |           |                   |                      |                            | x                  | Grassland-G: C- HG |
| ED-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | ED-01        | 4259744        | 658532        | 0           | 0          | 0            | 0             | 0                    | 286       |             |              |          |           |           |            |           |                   |                      |                            |                    | Grassland-G: C- HG |
| ED-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | ED-01        | 4259744        | 658532        | 0           | 0          | 0            | 0             | 0                    | 286       |             |              |          |           |           |            |           |                   |                      |                            |                    | Grassland-G: C- HG |
| ED-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | ED-01        | 4259744        | 658532        | 0           | 0          | 0            | 0             | 0                    | 286       |             |              |          |           |           |            |           |                   |                      |                            |                    | Grassland-G: C- HG |
| ED-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | ED-01        | 4259744        | 658532        | 0           | 0          | 0            | 0             | 0                    | 286       |             |              |          |           |           |            |           |                   |                      |                            |                    | Grassland-G: C- HG |
| ED-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | ED-01        | 4259744        | 658532        | 0           | 0          | 0            | 0             | 0                    | 286       |             |              |          |           |           |            |           |                   |                      |                            |                    | Grassland-G: C- HG |
| ED-02                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Cloudy             | ED-02        | 4259832        | 658315        | 10.0        | 11.0       | 7.6          | 22.9          | 2,000.0              | 3,363     |             |              |          |           |           |            | x         |                   |                      |                            | x                  | Grassland-G: C- HG |
| ED-02                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | ED-02        | 4259832        | 658315        | 17.4        | 16.4       | 20.0         | 40.0          | 120.0                | 3,363     |             |              |          | x         | x         | x          |           |                   | x                    | x                          | Grassland-G: C- HG |                    |
| ED-02                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | ED-02        | 4259832        | 658315        | 17.1        | 15.7       | 8.0          | 22.0          | 26.0                 | 286       |             |              |          | x         | x         |            |           | x                 | x                    | x                          | Grassland-G: C- HG |                    |
| ED-02                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | ED-02        | 4259832        | 658315        | 16.3        | 17.0       | 15.0         | 25.0          | 30.0                 | 3,363     |             |              |          | x         | x         | x          | x         |                   | x                    | x                          | Grassland-G: C- HG |                    |
| ED-02                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | ED-02        | 4259832        | 658315        | 25.5        | 26.7       | 15.0         | 20.0          | 20.0                 | 3,363     |             |              |          | x         | x         |            | x         |                   | x                    |                            | Grassland-G: C- HG |                    |
| ED-02                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | ED-02        | 4259832        | 658315        | 20.0        | 24.8       | 4.0          | 8.0           | 5.0                  | 3,363     |             |              |          |           |           | x          | x         |                   |                      |                            | Grassland-G: C- HG |                    |
| ED-02                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | ED-02        | 4259832        | 658315        | 24.4        | 19.8       | 20.0         | 33.0          | 29.0                 | 3,363     |             |              |          | x         |           | x          | x         |                   |                      |                            | Grassland-G: C- HG |                    |
| ED-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear              | ED-03        | 4260675        | 657971        | 0           | 0          | 0.0          | 0.0           | 0                    | 784       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |                    |

C cattle  
 CYCA *Cyzicus californicus*  
 D ditch  
 D disturbed

ED ephemeral drainage  
 FEW freshwater emergent wetland  
 G grazed  
 H horse

HG heavy grazing  
 ID intermittent drainage  
 LG light grazing  
 LIOC *Linderiella occidentalis*

MG moderate grazing  
 P pond  
 P plowed  
 PF ponded feature

PSRE *Pseudacris regilla*  
 SW seasonal wetland  
 SWS seasonal wetland swale  
 T trash

TT tire tracks  
 UG ungrazed  
 US upland swale  
 VP vernal pool



ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition |                      |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|-------------------|----------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                   | Diptera Chironomidae |
| ED-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | ED-03        | 4260675        | 657971        | 0           | 0          | 0            | 0             | 0                    | 784       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| ED-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | ED-03        | 4260675        | 657971        | 0           | 0          | 0            | 0             | 0                    | 784       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| ED-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | ED-03        | 4260675        | 657971        | 0           | 0          | 0            | 0             | 0                    | 784       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| ED-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | ED-03        | 4260675        | 657971        | 0           | 0          | 0            | 0             | 0                    | 784       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| ED-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | ED-03        | 4260675        | 657971        | 0           | 0          | 0            | 0             | 0                    | 784       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| ED-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | ED-03        | 4260675        | 657971        | 0           | 0          | 0            | 0             | 0                    | 784       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| ED-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 2        | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear              | ED-04        | 4260866        | 658231        | 0           | 0          | 0.0          | 0.0           | 0                    | 55        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| ED-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 2        | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | ED-04        | 4260866        | 658231        | 0           | 0          | 0            | 0             | 0                    | 55        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| ED-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 2        | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | ED-04        | 4260866        | 658231        | 0           | 0          | 0            | 0             | 0                    | 55        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| ED-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 2        | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | ED-04        | 4260866        | 658231        | 0           | 0          | 0            | 0             | 0                    | 55        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| ED-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 2        | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear              | ED-04        | 4260866        | 658231        | 0           | 0          | 0            | 0             | 0                    | 55        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| ED-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 2        | Heather Moine/TE-60147A-1 | 4/15/2021 | 0800-1700 | Clear              | ED-04        | 4260866        | 658231        | 0           | 0          | 0            | 0             | 0                    | 55        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| ED-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 2        | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | ED-04        | 4260866        | 658231        | 0           | 0          | 0            | 0             | 0                    | 55        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| ED-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear              | ED-05        | 4259917        | 658084        | 10.0        | 8.0        | 22.9         | 17.8          | 5.0                  | 6         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| ED-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 2/19/2021 | 0800-1700 | Cloudy             | ED-05        | 4259917        | 658084        | 13.0        | 13.0       | 15.0         | 25.0          | 3.0                  | 6         |             |              |          |           |           |            |           |                   |                            | x                 | Grassland-G: C- HG   |

C cattle  
 CYCA *Cyzicus californicus*  
 D ditch  
 D disturbed

ED ephemeral drainage  
 FEW freshwater emergent wetland  
 G grazed  
 H horse

HG heavy grazing  
 ID intermittent drainage  
 LG light grazing  
 LIOC *Linderiella occidentalis*

MG moderate grazing  
 P pond  
 P plowed  
 PF ponded feature

PSRE *Pseudacris regilla*  
 SW seasonal wetland  
 SWS seasonal wetland swale  
 T trash

TT tire tracks  
 UG ungrazed  
 US upland swale  
 VP vernal pool

ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                      |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   |                      | Platyhelminths (flatworms) | Habitat Condition  |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|----------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------|----------------------------|--------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions   | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae | Diptera Chironomidae |                            |                    |
| ED-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear                | ED-05        | 4259917        | 658084        | 0           | 0          | 0            | 0             | 0                    | 6         |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| ED-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy               | ED-05        | 4259917        | 658084        | 0           | 0          | 0            | 0             | 0                    | 6         |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| ED-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear                | ED-05        | 4259917        | 658084        | 0           | 0          | 0            | 0             | 0                    | 6         |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| ED-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear                | ED-05        | 4259917        | 658084        | 0           | 0          | 0            | 0             | 0                    | 6         |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| ED-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear                | ED-05        | 4259917        | 658084        | 0           | 0          | 0            | 0             | 0                    | 6         |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| FEW-01                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 15       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear                | FEW-01       | 4259186        | 657792        | 0           | 0          | 0.0          | 0.0           | 0                    | 72        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| FEW-01                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 15       | Heather Moine/TE-60147A-1 | 2/19/2021 | 0800-1700 | Cloudy               | FEW-01       | 4259186        | 657792        | 0           | 0          | 0            | 0             | 0                    | 72        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| FEW-01                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 15       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear                | FEW-01       | 4259186        | 657792        | 0           | 0          | 0            | 0             | 0                    | 72        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| FEW-01                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 15       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy               | FEW-01       | 4259186        | 657792        | 0           | 0          | 0            | 0             | 0                    | 72        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| FEW-01                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 15       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear                | FEW-01       | 4259186        | 657792        | 0           | 0          | 0            | 0             | 0                    | 72        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| FEW-01                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 15       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear                | FEW-01       | 4259186        | 657792        | 22.4        | 24.6       | 6.0          | 10.0          | 2.0                  | 72        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| FEW-01                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 15       | Heather Moine/TE-60147A-1 | 4/29/2021 | 0800-1700 | Clear                | FEW-01       | 4259186        | 657792        | 30.2        | 25.1       | 4.0          | 8.0           | 1.0                  | 72        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| ID-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Precipitation - Full | ID-01        | 4260515        | 658797        | 12.0        | 11.0       | 2.5          | 61.0          | 5,000.0              | 9,567     |             |              |          | x         |           | x          |           |                   | x                    | x                          | Grassland-G: C- HG |
| ID-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear                | ID-01        | 4260515        | 658797        | 16.4        | 15.2       | 15.0         | 45.0          | 1,500.0              | 9,567     |             |              |          | x         |           | x          |           | x                 |                      | x                          | Grassland-G: C- HG |
| ID-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy               | ID-01        | 4260515        | 658797        | 14.8        | 15.2       | 15.0         | 25.0          | 150.0                | 9,567     |             |              |          | x         |           | x          |           | x                 |                      | x                          | Grassland-G: C- HG |

C cattle  
 CYCA *Cyzicus californicus*  
 D ditch  
 D disturbed

ED ephemeral drainage  
 FEW freshwater emergent wetland  
 G grazed  
 H horse

HG heavy grazing  
 ID intermittent drainage  
 LG light grazing  
 LIOC *Linderiella occidentalis*

MG moderate grazing  
 P pond  
 P plowed  
 PF ponded feature

PSRE *Pseudacris regilla*  
 SW seasonal wetland  
 SWS seasonal wetland swale  
 T trash

TT tire tracks  
 UG ungrazed  
 US upland swale  
 VP vernal pool



ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans                 |              |          |           |           | Insects    |           |                   |                      | Platyhelminths (flatworms) | Habitat Condition  |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-----------------------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------|----------------------------|--------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans                 | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae | Diptera Chironomidae |                            |                    |
| ID-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | ID-01        | 4260515        | 658797        | 14.5        | 18.8       | 15.0         | 35.0          | 120.0                | 9,567     |                             |              |          | x         |           | x          | x         |                   |                      | x                          | Grassland-G: C- HG |
| ID-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | ID-01        | 4260515        | 658797        | 24.6        | 27.4       | 10.0         | 17.0          | 78.0                 | 9,567     |                             |              |          | x         | x         |            | x         |                   | x                    |                            | Grassland-G: C- HG |
| ID-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | ID-01        | 4260515        | 658797        | 0           | 0          | 0            | 0             | 0                    | 9,567     |                             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| ID-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | ID-01        | 4260515        | 658797        | 0           | 0          | 0            | 0             | 0                    | 9,567     |                             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| P-01                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 2        | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear              | P-01         | 4260846        | 658258        | 17.0        | 20.0       | 22.9         | 40.6          | 500.0                | 1,133     |                             |              |          | x         |           | x          |           |                   |                      |                            | Grassland-G: C- HG |
| P-01                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 2        | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | P-01         | 4260846        | 658258        | 18.3        | 13.7       | 32.0         | 39.0          | 1,200.0              | 1,133     |                             |              |          | x         | x         |            |           |                   |                      |                            | Grassland-G: C- HG |
| P-01                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 2        | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | P-01         | 4260846        | 658258        | 17.0        | 15.5       | 20.0         | 35.0          | 75.0                 | 1,133     |                             |              |          |           | x         | x          |           |                   |                      |                            | Grassland-G: C- HG |
| P-01                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 2        | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | P-01         | 4260846        | 658258        | 15.7        | 18.2       | 28.0         | 42.0          | 500.0                | 1,133     |                             |              |          | x         | x         |            | x         |                   |                      |                            | Grassland-G: C- HG |
| P-01                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 2        | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear              | P-01         | 4260846        | 658258        | 16.5        | 12.9       | 20.0         | 32.0          | 350.0                | 1,133     |                             |              |          |           | x         |            | x         |                   | x                    |                            | Grassland-G: C- HG |
| P-01                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 2        | Heather Moine/TE-60147A-1 | 4/15/2021 | 0800-1700 | Clear              | P-01         | 4260846        | 658258        | 24.1        | 29.8       | 18.0         | 27.0          | 35.0                 | 1,133     |                             |              |          |           | x         |            | x         |                   |                      |                            | Grassland-G: C- HG |
| P-01                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 2        | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | P-01         | 4260846        | 658258        | 28.3        | 28.6       | 15.0         | 25.0          | 335.0                | 1,133     |                             |              |          |           | x         |            | x         |                   |                      |                            | Grassland-G: C- HG |
| P-02                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Partly Cloudy      | P-02         | 4259043        | 658725        | 12.0        | 13.0       | 35.6         | 83.8          | 160.0                | 1,498     |                             |              |          |           |           | x          |           |                   |                      |                            | Grassland-G: C- LG |
| P-02                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | P-02         | 4259043        | 658725        | 14.0        | 8.2        | 55.0         | 82.0          | 1,000.0              | 1,498     | LIOC                        |              |          | x         | x         |            |           |                   |                      | x                          | Grassland-G: C- LG |
| P-02                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | P-02         | 4259043        | 658725        | 11.9        | 11.6       | 30.0         | 80.0          | 150.0                | 1,498     | LIOC-male & female observed |              | x        | x         |           | x          |           |                   | x                    | x                          | Grassland-G: C- LG |

|      |                             |     |                             |      |                                 |    |                  |      |                           |    |              |
|------|-----------------------------|-----|-----------------------------|------|---------------------------------|----|------------------|------|---------------------------|----|--------------|
| C    | cattle                      | ED  | ephemeral drainage          | HG   | heavy grazing                   | MG | moderate grazing | PSRE | <i>Pseudacris regilla</i> | TT | tire tracks  |
| CYCA | <i>Cyzicus californicus</i> | FEW | freshwater emergent wetland | ID   | intermittent drainage           | P  | pond             | SW   | seasonal wetland          | UG | ungrazed     |
| D    | ditch                       | G   | grazed                      | LG   | light grazing                   | P  | plowed           | SWS  | seasonal wetland swale    | US | upland swale |
| D    | disturbed                   | H   | horse                       | LIOC | <i>Linderiella occidentalis</i> | PF | ponded feature   | T    | trash                     | VP | vernal pool  |

ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                         |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   |                      | Platyhelminths (flatworms) | Habitat Condition  |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|-------------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------|----------------------------|--------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions      | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae | Diptera Chironomidae |                            |                    |
| P-02                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy                  | P-02         | 4259043        | 658725        | 11.5        | 12.9       | 30.0         | 55.0          | 700.0                | 1,498     | LIOC        |              | x        | x         |           |            |           |                   |                      | x                          | Grassland-G: C- LG |
| P-02                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear                   | P-02         | 4259043        | 658725        | 19.3        | 12.9       | 40.0         | 65.0          |                      | 1,498     |             |              | x        |           | x         | x          | x         |                   |                      |                            | Grassland-G: C- HG |
| P-02                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/15/2021 | 0800-1700 | Clear                   | P-02         | 4259043        | 658725        | 20.9        | 18.4       | 30.0         | 50.0          | 200.0                | 1,498     |             |              | x        | x         | x         |            | x         |                   | x                    |                            | Grassland-G: C- HG |
| P-02                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear                   | P-02         | 4259043        | 658725        | 29.7        | 31.4       | 40.0         | 60.0          | 120.0                | 1,498     |             |              |          |           | x         |            | x         |                   |                      |                            | Grassland-G: C- HG |
| P-03                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear                   | P-03         | 4259534        | 657840        | 11.0        | 12.0       | *            | *             | 10,000.0             | 66,195    |             |              |          | x         |           | x          |           |                   |                      |                            | Grassland-G: C- HG |
| P-03                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 2/19/2021 | 0800-1700 | Cloudy                  | P-03         | 4259534        | 657840        | 12.0        | 12.1       | *            | *             | 0                    | 66,195    |             |              |          | x         | x         |            |           |                   | x                    |                            | Grassland-G: C- HG |
| P-03                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear                   | P-03         | 4259534        | 657840        | 18.2        | 17.5       | 100.0        | 130.0         | 66,195.0             | 66,195    |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| P-03                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy                  | P-03         | 4259534        | 657840        | 0           | 0          | 0            | 0             | 66,195.0             | 66,195    |             |              | x        | x         | x         |            | x         |                   | x                    |                            | Grassland-G: C- HG |
| P-03                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear                   | P-03         | 4259534        | 657840        | 24.7        | 24.4       | *            | *             | 66,195.0             | 66,195    |             |              |          | x         | x         | x          | x         |                   |                      |                            | Grassland-G: C- HG |
| P-03                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/15/2021 | 0800-1700 | Clear                   | P-03         | 4259534        | 657840        | 21.4        | 23.5       | *            | *             | 65,000.0             | 66,195    |             |              |          |           | x         |            | x         |                   | x                    |                            | Grassland-G: C- HG |
| P-03                                                             | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/29/2021 | 0800-1700 | Clear                   | P-03         | 4259534        | 657840        | 29.3        | 29.8       | *            | *             | 43,000.0             | 66,195    |             |              |          |           | x         |            | x         |                   |                      |                            | Grassland-G: C- HG |
| PF-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Precipitation - Drizzle | PF-01        | 4259908        | 658234        | 12.0        | 13.0       | 12.7         | 22.9          | 20.0                 | 20        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| PF-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear                   | PF-01        | 4259908        | 658234        | 17.1        | 17.5       | 10.0         | 18.0          | 10.0                 | 20        |             |              |          | x         | x         |            |           |                   |                      |                            | Grassland-G: C- MG |
| PF-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy                  | PF-01        | 4259908        | 658234        | 0           | 0          | 0            | 0             | 0                    | 20        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| PF-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear                   | PF-01        | 4259908        | 658234        | 0           | 0          | 0            | 0             | 0                    | 20        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |

C cattle  
 CYCA *Cyzicus californicus*  
 D ditch  
 D disturbed

ED ephemeral drainage  
 FEW freshwater emergent wetland  
 G grazed  
 H horse

HG heavy grazing  
 ID intermittent drainage  
 LG light grazing  
 LIOC *Linderiella occidentalis*

MG moderate grazing  
 P pond  
 P plowed  
 PF ponded feature

PSRE *Pseudocris regilla*  
 SW seasonal wetland  
 SWS seasonal wetland swale  
 T trash

TT tire tracks  
 UG ungrazed  
 US upland swale  
 VP vernal pool



ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition |                              |                    |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|-------------------|------------------------------|--------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                   | Diptera Chironomidae         |                    |
| PF-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | PF-01        | 4259908        | 658234        | 0           | 0          | 0            | 0             | 0                    | 20        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG           |                    |
| PF-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | PF-01        | 4259908        | 658234        | 0           | 0          | 0            | 0             | 0                    | 20        |             |              |          |           |           |            |           |                   |                            |                   |                              | Grassland-G: C- MG |
| PF-02                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Cloudy             | PF-02        | 4259913        | 659444        | 13.0        | 13.0       | 5.1          | 7.6           | 5.0                  | 5         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-D: T; G: C- LG     |                    |
| PF-02                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | PF-02        | 4259913        | 659444        | 0           | 0          | 0            | 0             | 0                    | 5         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-D: T; G: C- LG     |                    |
| PF-02                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | PF-02        | 4259913        | 659444        | 0           | 0          | 0            | 0             | 0                    | 5         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-D: T; G: C- LG     |                    |
| PF-02                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | PF-02        | 4259913        | 659444        | 0           | 0          | 0            | 0             | 0                    | 5         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-D: T; G: C- LG     |                    |
| PF-02                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | PF-02        | 4259913        | 659444        | 0           | 0          | 0            | 0             | 0                    | 5         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-D: T; G: C- LG     |                    |
| PF-02                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | PF-02        | 4259913        | 659444        | 0           | 0          | 0            | 0             | 0                    | 5         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-D: T; G: C- LG     |                    |
| PF-02                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | PF-02        | 4259913        | 659444        | 0           | 0          | 0            | 0             | 0                    | 5         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-D: T; G: C- LG     |                    |
| PF-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Cloudy             | PF-03        | 4259845        | 659428        | 11.0        | 10.0       | 5.1          | 12.7          | 25.0                 | 25        |             |              |          |           |           |            | x         |                   |                            |                   | Grassland-D: TT; G: C- LG    |                    |
| PF-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | PF-03        | 4259845        | 659428        | 12.2        | 11.4       | 6.0          | 14.0          | 9.0                  | 25        |             |              |          | x         | x         | x          |           |                   |                            |                   | Grassland-D: TT; G: C- LG    |                    |
| PF-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | PF-03        | 4259845        | 659428        | 0           | 0          | 0            | 0             | 0                    | 25        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-D: TT; G: C- LG    |                    |
| PF-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | PF-03        | 4259845        | 659428        | 0           | 0          | 0            | 0             | 0                    | 25        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-D: TT; G: C- LG    |                    |
| PF-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | PF-03        | 4259845        | 659428        | 0           | 0          | 0            | 0             | 0                    | 25        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-D: P, TT; G: C- LG |                    |

C cattle  
 CYCA *Cyzicus californicus*  
 D ditch  
 D disturbed

ED ephemeral drainage  
 FEW freshwater emergent wetland  
 G grazed  
 H horse

HG heavy grazing  
 ID intermittent drainage  
 LG light grazing  
 LIOC *Linderiella occidentalis*

MG moderate grazing  
 P pond  
 P plowed  
 PF ponded feature

PSRE *Pseudacris regilla*  
 SW seasonal wetland  
 SWS seasonal wetland swale  
 T trash

TT tire tracks  
 UG ungrazed  
 US upland swale  
 VP vernal pool

ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition |                              |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|-------------------|------------------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                   | Diptera Chironomidae         |
| PF-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | PF-03        | 4259845        | 659428        | 0           | 0          | 0            | 0             | 0                    | 25        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-D: P, TT; G: C- LG |
| PF-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | PF-03        | 4259845        | 659428        | 0           | 0          | 0            | 0             | 0                    | 25        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-D: P, TT; G: C- LG |
| PF-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Cloudy             | PF-04        | 4259739        | 658432        | 10.0        | 8.0        | 10.2         | 12.7          | 5.0                  | 6         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG           |
| PF-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | PF-04        | 4259739        | 658432        | 16.2        | 13.7       | 6.0          | 13.0          | 6.0                  | 6         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG           |
| PF-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | PF-04        | 4259739        | 658432        | 0           | 0          | 0            | 0             | 0                    | 6         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG           |
| PF-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | PF-04        | 4259739        | 658432        | 0           | 0          | 0            | 0             | 0                    | 6         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG           |
| PF-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | PF-04        | 4259739        | 658432        | 0           | 0          | 0            | 0             | 0                    | 6         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG           |
| PF-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | PF-04        | 4259739        | 658432        | 0           | 0          | 0            | 0             | 0                    | 6         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG           |
| PF-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | PF-04        | 4259739        | 658432        | 0           | 0          | 0            | 0             | 0                    | 6         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG           |
| PF-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | PF-05        | 4259297        | 658907        | 12.2        | 9.6        | 3.0          | 8.0           | 5.0                  | 5         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG           |
| PF-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | PF-05        | 4259297        | 658907        | 0           | 0          | 0            | 0             | 0                    | 5         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG           |
| PF-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy             | PF-05        | 4259297        | 658907        | 0           | 0          | 0            | 0             | 0                    | 5         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG           |
| PF-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear              | PF-05        | 4259297        | 658907        | 0           | 0          | 0            | 0             | 0                    | 5         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG           |
| PF-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | PF-05        | 4259297        | 658907        | 0           | 0          | 0            | 0             | 0                    | 5         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG           |
| PF-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | PF-05        | 4259297        | 658907        | 0           | 0          | 0            | 0             | 0                    | 5         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG           |

C cattle  
 CYCA *Cyzicus californicus*  
 D ditch  
 D disturbed

ED ephemeral drainage  
 FEW freshwater emergent wetland  
 G grazed  
 H horse

HG heavy grazing  
 ID intermittent drainage  
 LG light grazing  
 LIOC *Linderiella occidentalis*

MG moderate grazing  
 P pond  
 P plowed  
 PF ponded feature

PSRE *Pseudacris regilla*  
 SW seasonal wetland  
 SWS seasonal wetland swale  
 T trash

TT tire tracks  
 UG ungrazed  
 US upland swale  
 VP vernal pool



ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   |                      | Platyhelminths (flatworms) | Habitat Condition  |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------|----------------------------|--------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae | Diptera Chironomidae |                            |                    |
| PF-06                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear              | PF-06        | 4259423        | 657728        | 11.0        | 13.0       | 7.6          | 12.7          | 5.0                  | 5         |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| PF-06                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 2/19/2021 | 0800-1700 | Cloudy             | PF-06        | 4259423        | 657728        | 0           | 0          | 0            | 0             | 0                    | 5         |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| PF-06                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | PF-06        | 4259423        | 657728        | 0           | 0          | 0            | 0             | 0                    | 5         |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| PF-06                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy             | PF-06        | 4259423        | 657728        | 0           | 0          | 0            | 0             | 0                    | 5         |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| PF-06                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear              | PF-06        | 4259423        | 657728        | 0           | 0          | 0            | 0             | 0                    | 5         |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| PF-06                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | PF-06        | 4259423        | 657728        | 0           | 0          | 0            | 0             | 0                    | 5         |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| PF-06                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/29/2021 | 0800-1700 | Clear              | PF-06        | 4259423        | 657728        | 0           | 0          | *            | *             | 0                    | 5         |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| PF-07                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | PF-07        | 4258959        | 658514        | 17.9        | 14.7       | 3.0          | 6.0           | 1.0                  | 1         |             |              |          | x         | x         |            |           |                   |                      | x                          | Grassland-G: C- LG |
| PF-07                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | PF-07        | 4258959        | 658514        | 0           | 0          | 0            | 0             | 0                    | 1         |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- LG |
| PF-07                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy             | PF-07        | 4258959        | 658514        | 0           | 0          | 0            | 0             | 0                    | 1         |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- LG |
| PF-07                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear              | PF-07        | 4258959        | 658514        | 0           | 0          | 0            | 0             | 0                    | 1         |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- LG |
| PF-07                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | PF-07        | 4258959        | 658514        | 0           | 0          | 0            | 0             | 0                    | 1         |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- LG |
| PF-07                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | PF-07        | 4258959        | 658514        | 0           | 0          | 0            | 0             | 0                    | 1         |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- LG |
| PF-08                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Partly Cloudy      | PF-08        | 4258884        | 658533        | 18.0        | 19.0       | 12.7         | 17.8          | 10.0                 | 10        |             |              |          |           |           | x          |           |                   |                      |                            | Grassland-G: C- MG |
| PF-08                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | PF-08        | 4258884        | 658533        | 15.0        | 9.0        | 3.0          | 8.0           | 8.0                  | 10        |             |              |          |           | x         |            |           |                   |                      | x                          | Grassland-G: C- MG |

|      |                             |     |                             |      |                                 |    |                  |      |                           |    |              |
|------|-----------------------------|-----|-----------------------------|------|---------------------------------|----|------------------|------|---------------------------|----|--------------|
| C    | cattle                      | ED  | ephemeral drainage          | HG   | heavy grazing                   | MG | moderate grazing | PSRE | <i>Pseudacris regilla</i> | TT | tire tracks  |
| CYCA | <i>Cyzicus californicus</i> | FEW | freshwater emergent wetland | ID   | intermittent drainage           | P  | pond             | SW   | seasonal wetland          | UG | ungrazed     |
| D    | ditch                       | G   | grazed                      | LG   | light grazing                   | P  | plowed           | SWS  | seasonal wetland swale    | US | upland swale |
| D    | disturbed                   | H   | horse                       | LIOC | <i>Linderiella occidentalis</i> | PF | ponded feature   | T    | trash                     | VP | vernal pool  |

ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition |                           |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|-------------------|---------------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                   | Diptera Chironomidae      |
| PF-08                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | PF-08        | 4258884        | 658533        | 0           | 0          | 0            | 0             | 0                    | 10        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG        |
| PF-08                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy             | PF-08        | 4258884        | 658533        | 0           | 0          | 0            | 0             | 0                    | 10        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG        |
| PF-08                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear              | PF-08        | 4258884        | 658533        | 0           | 0          | 0            | 0             | 0                    | 10        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG        |
| PF-08                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | PF-08        | 4258884        | 658533        | 0           | 0          | 0            | 0             | 0                    | 10        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG        |
| PF-08                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | PF-08        | 4258884        | 658533        | 0           | 0          | 0            | 0             | 0                    | 10        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG        |
| PF-09                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Partly Cloudy      | PF-09        | 4258883        | 658436        | 16.0        | 18.0       | 2.5          | 10.2          | 2.0                  | 2         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| PF-09                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | PF-09        | 4258883        | 658436        | 0           | 0          | 0            | 0             | 0                    | 2         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| PF-09                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | PF-09        | 4258883        | 658436        | 0           | 0          | 0            | 0             | 0                    | 2         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| PF-09                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy             | PF-09        | 4258883        | 658436        | 0           | 0          | 0            | 0             | 0                    | 2         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| PF-09                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear              | PF-09        | 4258883        | 658436        | 0           | 0          | 0            | 0             | 0                    | 2         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| PF-09                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | PF-09        | 4258883        | 658436        | 0           | 0          | 0            | 0             | 0                    | 2         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| PF-09                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | PF-09        | 4258883        | 658436        | 0           | 0          | 0            | 0             | 0                    | 2         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| PF-10                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Cloudy             | PF-10        | 4260167        | 659217        | 10.0        | 8.0        | 5.1          | 7.6           | 3.0                  | 4         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-D: TT; G: C- HG |
| PF-10                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | PF-10        | 4260167        | 659217        | 10.1        | 8.8        | 3.0          | 5.0           | 4.0                  | 4         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-D: TT; G: C- HG |

C cattle  
 CYCA *Cyzicus californicus*  
 D ditch  
 D disturbed

ED ephemeral drainage  
 FEW freshwater emergent wetland  
 G grazed  
 H horse

HG heavy grazing  
 ID intermittent drainage  
 LG light grazing  
 LIOC *Linderiella occidentalis*

MG moderate grazing  
 P pond  
 P plowed  
 PF ponded feature

PSRE *Pseudacris regilla*  
 SW seasonal wetland  
 SWS seasonal wetland swale  
 T trash

TT tire tracks  
 UG ungrazed  
 US upland swale  
 VP vernal pool



ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition |                           |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|-------------------|---------------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                   | Diptera Chironomidae      |
| PF-10                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | PF-10        | 4260167        | 659217        | 0           | 0          | 0            | 0             | 0                    | 4         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-D: TT; G: C- HG |
| PF-10                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | PF-10        | 4260167        | 659217        | 0           | 0          | 0            | 0             | 0                    | 4         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-D: TT; G: C- HG |
| PF-10                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | PF-10        | 4260167        | 659217        | 0           | 0          | 0            | 0             | 0                    | 4         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-D: TT; G: C- HG |
| PF-10                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | PF-10        | 4260167        | 659217        | 0           | 0          | 0            | 0             | 0                    | 4         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-D: TT; G: C- HG |
| PF-10                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | PF-10        | 4260167        | 659217        | 0           | 0          | 0            | 0             | 0                    | 4         |             |              |          |           |           |            |           |                   |                            |                   | Grassland-D: TT; G: C- HG |
| SW-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Cloudy             | SW-01        | 4260144        | 659234        | 0           | 0          | 0.0          | 0.0           | 0                    | 25        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG        |
| SW-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | SW-01        | 4260144        | 659234        | 0           | 0          | 0            | 0             | 0                    | 25        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG        |
| SW-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | SW-01        | 4260144        | 659234        | 0           | 0          | 0            | 0             | 0                    | 25        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG        |
| SW-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SW-01        | 4260144        | 659234        | 0           | 0          | 0            | 0             | 0                    | 25        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG        |
| SW-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SW-01        | 4260144        | 659234        | 0           | 0          | 0            | 0             | 0                    | 25        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG        |
| SW-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-01        | 4260144        | 659234        | 0           | 0          | 0            | 0             | 0                    | 25        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG        |
| SW-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-01        | 4260144        | 659234        | 0           | 0          | 0            | 0             | 0                    | 25        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG        |
| SW-02                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Cloudy             | SW-02        | 4260153        | 659255        | 0           | 0          | 0.0          | 0.0           | 0                    | 25        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG        |
| SW-02                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | SW-02        | 4260153        | 659255        | 0           | 0          | 0            | 0             | 0                    | 34        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG        |

- |      |                             |     |                             |      |                                 |    |                  |      |                           |    |              |
|------|-----------------------------|-----|-----------------------------|------|---------------------------------|----|------------------|------|---------------------------|----|--------------|
| C    | cattle                      | ED  | ephemeral drainage          | HG   | heavy grazing                   | MG | moderate grazing | PSRE | <i>Pseudacris regilla</i> | TT | tire tracks  |
| CYCA | <i>Cyzicus californicus</i> | FEW | freshwater emergent wetland | ID   | intermittent drainage           | P  | pond             | SW   | seasonal wetland          | UG | ungrazed     |
| D    | ditch                       | G   | grazed                      | LG   | light grazing                   | P  | plowed           | SWS  | seasonal wetland swale    | US | upland swale |
| D    | disturbed                   | H   | horse                       | LIOC | <i>Linderiella occidentalis</i> | PF | ponded feature   | T    | trash                     | VP | vernal pool  |

ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition |                      |                    |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|-------------------|----------------------|--------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                   | Diptera Chironomidae |                    |
| SW-02                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | SW-02        | 4260153        | 659255        | 0           | 0          | 0            | 0             | 0                    | 34        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |                    |
| SW-02                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SW-02        | 4260153        | 659255        | 0           | 0          | 0            | 0             | 0                    | 34        |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- MG |
| SW-02                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SW-02        | 4260153        | 659255        | 0           | 0          | 0            | 0             | 0                    | 34        |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- MG |
| SW-02                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-02        | 4260153        | 659255        | 0           | 0          | 0            | 0             | 0                    | 34        |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- MG |
| SW-02                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-02        | 4260153        | 659255        | 0           | 0          | 0            | 0             | 0                    | 34        |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- MG |
| SW-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Cloudy             | SW-03        | 4260125        | 659219        | 0           | 0          | 0.0          | 0.0           | 0                    | 467       |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- MG |
| SW-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | SW-03        | 4260125        | 659219        | 0           | 0          | 0            | 0             | 0                    | 467       |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- MG |
| SW-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | SW-03        | 4260125        | 659219        | 0           | 0          | 0            | 0             | 0                    | 467       |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- MG |
| SW-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SW-03        | 4260125        | 659219        | 0           | 0          | 0            | 0             | 0                    | 467       |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- MG |
| SW-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SW-03        | 4260125        | 659219        | 0           | 0          | 0            | 0             | 0                    | 467       |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- MG |
| SW-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-03        | 4260125        | 659219        | 0           | 0          | 0            | 0             | 0                    | 467       |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- MG |
| SW-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-03        | 4260125        | 659219        | 0           | 0          | 0            | 0             | 0                    | 467       |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- MG |
| SW-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Cloudy             | SW-04        | 4260067        | 659203        | 0           | 0          | 0.0          | 0.0           | 0                    | 142       |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- MG |
| SW-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | SW-04        | 4260067        | 659203        | 0           | 0          | 0            | 0             | 0                    | 142       |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- MG |
| SW-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | SW-04        | 4260067        | 659203        | 0           | 0          | 0            | 0             | 0                    | 142       |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- MG |

|      |                             |     |                             |      |                                 |    |                  |      |                           |    |              |
|------|-----------------------------|-----|-----------------------------|------|---------------------------------|----|------------------|------|---------------------------|----|--------------|
| C    | cattle                      | ED  | ephemeral drainage          | HG   | heavy grazing                   | MG | moderate grazing | PSRE | <i>Pseudacris regilla</i> | TT | tire tracks  |
| CYCA | <i>Cyzicus californicus</i> | FEW | freshwater emergent wetland | ID   | intermittent drainage           | P  | pond             | SW   | seasonal wetland          | UG | ungrazed     |
| D    | ditch                       | G   | grazed                      | LG   | light grazing                   | P  | plowed           | SWS  | seasonal wetland swale    | US | upland swale |
| D    | disturbed                   | H   | horse                       | LIOC | <i>Linderiella occidentalis</i> | PF | ponded feature   | T    | trash                     | VP | vernal pool  |



ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition  |                      |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|--------------------|----------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                    | Diptera Chironomidae |
| SW-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SW-04        | 4260067        | 659203        | 0           | 0          | 0            | 0             | 0                    | 142       |             |              |          |           |           |            |           |                   |                            | Grassland-G: C- MG |                      |
| SW-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SW-04        | 4260067        | 659203        | 0           | 0          | 0            | 0             | 0                    | 142       |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-04        | 4260067        | 659203        | 0           | 0          | 0            | 0             | 0                    | 142       |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-04        | 4260067        | 659203        | 0           | 0          | 0            | 0             | 0                    | 142       |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Cloudy             | SW-05        | 4260100        | 659228        | 0           | 0          | 0.0          | 0.0           | 0                    | 249       |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | SW-05        | 4260100        | 659228        | 0           | 0          | 0            | 0             | 0                    | 249       |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | SW-05        | 4260100        | 659228        | 0           | 0          | 0            | 0             | 0                    | 249       |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SW-05        | 4260100        | 659228        | 0           | 0          | 0            | 0             | 0                    | 249       |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SW-05        | 4260100        | 659228        | 0           | 0          | 0            | 0             | 0                    | 249       |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-05        | 4260100        | 659228        | 0           | 0          | 0            | 0             | 0                    | 249       |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-05        | 4260100        | 659228        | 0           | 0          | 0            | 0             | 0                    | 249       |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-06                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Cloudy             | SW-06        | 4260041        | 659247        | 0           | 0          | 0.0          | 0.0           | 0                    | 262       |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-06                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | SW-06        | 4260041        | 659247        | 0           | 0          | 0            | 0             | 0                    | 262       |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-06                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | SW-06        | 4260041        | 659247        | 0           | 0          | 0            | 0             | 0                    | 262       |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-06                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SW-06        | 4260041        | 659247        | 0           | 0          | 0            | 0             | 0                    | 262       |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |

C cattle  
 CYCA *Cyzicus californicus*  
 D ditch  
 D disturbed

ED ephemeral drainage  
 FEW freshwater emergent wetland  
 G grazed  
 H horse

HG heavy grazing  
 ID intermittent drainage  
 LG light grazing  
 LIOC *Linderiella occidentalis*

MG moderate grazing  
 P pond  
 P plowed  
 PF ponded feature

PSRE *Pseudacris regilla*  
 SW seasonal wetland  
 SWS seasonal wetland swale  
 T trash

TT tire tracks  
 UG ungrazed  
 US upland swale  
 VP vernal pool

ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition |                           |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|-------------------|---------------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                   | Diptera Chironomidae      |
| SW-06                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SW-06        | 4260041        | 659247        | 0           | 0          | 0            | 0             | 0                    | 262       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG        |
| SW-06                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-06        | 4260041        | 659247        | 0           | 0          | 0            | 0             | 0                    | 262       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG        |
| SW-06                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-06        | 4260041        | 659247        | 0           | 0          | 0            | 0             | 0                    | 262       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG        |
| SW-07                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Cloudy             | SW-07        | 4260037        | 659168        | 12.5        | 15.4       | 5.1          | 12.7          | 4.0                  | 135       |             |              |          |           |           | x          |           |                   |                            |                   | Grassland-D: TT; G: C- MG |
| SW-07                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | SW-07        | 4260037        | 659168        | 0           | 0          | 0            | 0             | 0                    | 135       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG        |
| SW-07                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | SW-07        | 4260037        | 659168        | 0           | 0          | 0            | 0             | 0                    | 135       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG        |
| SW-07                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SW-07        | 4260037        | 659168        | 0           | 0          | 0            | 0             | 0                    | 135       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG        |
| SW-07                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SW-07        | 4260037        | 659168        | 0           | 0          | 0            | 0             | 0                    | 135       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG        |
| SW-07                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-07        | 4260037        | 659168        | 0           | 0          | 0            | 0             | 0                    | 135       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG        |
| SW-07                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-07        | 4260037        | 659168        | 0           | 0          | 0            | 0             | 0                    | 135       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG        |
| SW-08                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Cloudy             | SW-08        | 4260009        | 659225        | 0           | 0          | 0.0          | 0.0           | 0                    | 59        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG        |
| SW-08                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | SW-08        | 4260009        | 659225        | 0           | 0          | 0            | 0             | 0                    | 59        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG        |
| SW-08                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | SW-08        | 4260009        | 659225        | 0           | 0          | 0            | 0             | 0                    | 59        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG        |
| SW-08                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SW-08        | 4260009        | 659225        | 0           | 0          | 0            | 0             | 0                    | 59        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG        |
| SW-08                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SW-08        | 4260009        | 659225        | 0           | 0          | 0            | 0             | 0                    | 59        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG        |

|      |                             |     |                             |      |                                 |    |                  |      |                           |    |              |
|------|-----------------------------|-----|-----------------------------|------|---------------------------------|----|------------------|------|---------------------------|----|--------------|
| C    | cattle                      | ED  | ephemeral drainage          | HG   | heavy grazing                   | MG | moderate grazing | PSRE | <i>Pseudacris regilla</i> | TT | tire tracks  |
| CYCA | <i>Cyzicus californicus</i> | FEW | freshwater emergent wetland | ID   | intermittent drainage           | P  | pond             | SW   | seasonal wetland          | UG | ungrazed     |
| D    | ditch                       | G   | grazed                      | LG   | light grazing                   | P  | plowed           | SWS  | seasonal wetland swale    | US | upland swale |
| D    | disturbed                   | H   | horse                       | LIOC | <i>Linderiella occidentalis</i> | PF | ponded feature   | T    | trash                     | VP | vernal pool  |



ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition  |                      |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|--------------------|----------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                    | Diptera Chironomidae |
| SW-08                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-08        | 4260009        | 659225        | 0           | 0          | 0            | 0             | 0                    | 59        |             |              |          |           |           |            |           |                   |                            | Grassland-G: C- MG |                      |
| SW-08                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-08        | 4260009        | 659225        | 0           | 0          | 0            | 0             | 0                    | 59        |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-09                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Cloudy             | SW-09        | 4260043        | 659218        | 0           | 0          | 0.0          | 0.0           | 0                    | 97        |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-09                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | SW-09        | 4260043        | 659218        | 0           | 0          | 0            | 0             | 0                    | 97        |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-09                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Clear              | SW-09        | 4260043        | 659218        | 0           | 0          | 0            | 0             | 0                    | 97        |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-09                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SW-09        | 4260043        | 659218        | 0           | 0          | 0            | 0             | 0                    | 97        |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-09                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SW-09        | 4260043        | 659218        | 0           | 0          | 0            | 0             | 0                    | 97        |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-09                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-09        | 4260043        | 659218        | 0           | 0          | 0            | 0             | 0                    | 97        |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-09                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-09        | 4260043        | 659218        | 0           | 0          | 0            | 0             | 0                    | 97        |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-10                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Cloudy             | SW-10        | 4260025        | 659214        | 0           | 0          | 0.0          | 0.0           | 0                    | 26        |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-10                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | SW-10        | 4260025        | 659214        | 0           | 0          | 0            | 0             | 0                    | 26        |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-10                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | SW-10        | 4260025        | 659214        | 0           | 0          | 0            | 0             | 0                    | 26        |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-10                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SW-10        | 4260025        | 659214        | 0           | 0          | 0            | 0             | 0                    | 26        |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-10                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SW-10        | 4260025        | 659214        | 0           | 0          | 0            | 0             | 0                    | 26        |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-10                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-10        | 4260025        | 659214        | 0           | 0          | 0            | 0             | 0                    | 26        |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |

|      |                             |     |                             |      |                                 |    |                  |      |                           |    |              |
|------|-----------------------------|-----|-----------------------------|------|---------------------------------|----|------------------|------|---------------------------|----|--------------|
| C    | cattle                      | ED  | ephemeral drainage          | HG   | heavy grazing                   | MG | moderate grazing | PSRE | <i>Pseudacris regilla</i> | TT | tire tracks  |
| CYCA | <i>Cyzicus californicus</i> | FEW | freshwater emergent wetland | ID   | intermittent drainage           | P  | pond             | SW   | seasonal wetland          | UG | ungrazed     |
| D    | ditch                       | G   | grazed                      | LG   | light grazing                   | P  | plowed           | SWS  | seasonal wetland swale    | US | upland swale |
| D    | disturbed                   | H   | horse                       | LIOC | <i>Linderiella occidentalis</i> | PF | ponded feature   | T    | trash                     | VP | vernal pool  |

ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition  |                      |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|--------------------|----------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                    | Diptera Chironomidae |
| SW-10                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-10        | 4260025        | 659214        | 0           | 0          | 0            | 0             | 0                    | 26        |             |              |          |           |           |            |           |                   |                            | Grassland-G: C- MG |                      |
| SW-11                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Cloudy             | SW-11        | 4259991        | 659242        | 0           | 0          | 0.0          | 0.0           | 0                    | 26        |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-11                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | SW-11        | 4259991        | 659242        | 0           | 0          | 0            | 0             | 0                    | 26        |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-11                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | SW-11        | 4259991        | 659242        | 0           | 0          | 0            | 0             | 0                    | 26        |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-11                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SW-11        | 4259991        | 659242        | 0           | 0          | 0            | 0             | 0                    | 26        |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-11                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SW-11        | 4259991        | 659242        | 0           | 0          | 0            | 0             | 0                    | 26        |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-11                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-11        | 4259991        | 659242        | 0           | 0          | 0            | 0             | 0                    | 26        |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-11                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-11        | 4259991        | 659242        | 0           | 0          | 0            | 0             | 0                    | 26        |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-12                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Cloudy             | SW-12        | 4259967        | 659297        | 0           | 0          | 0.0          | 0.0           | 0                    | 66        |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-12                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | SW-12        | 4259967        | 659297        | 0           | 0          | 0            | 0             | 0                    | 66        |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-12                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | SW-12        | 4259967        | 659297        | 0           | 0          | 0            | 0             | 0                    | 66        |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-12                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SW-12        | 4259967        | 659297        | 0           | 0          | 0            | 0             | 0                    | 66        |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-12                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SW-12        | 4259967        | 659297        | 0           | 0          | 0            | 0             | 0                    | 66        |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-12                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-12        | 4259967        | 659297        | 0           | 0          | 0            | 0             | 0                    | 66        |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |
| SW-12                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-12        | 4259967        | 659297        | 0           | 0          | 0            | 0             | 0                    | 66        |             |              |          |           |           |            |           |                   |                            |                    | Grassland-G: C- MG   |

C cattle  
 CYCA *Cyzicus californicus*  
 D ditch  
 D disturbed

ED ephemeral drainage  
 FEW freshwater emergent wetland  
 G grazed  
 H horse

HG heavy grazing  
 ID intermittent drainage  
 LG light grazing  
 LIOC *Linderiella occidentalis*

MG moderate grazing  
 P pond  
 P plowed  
 PF ponded feature

PSRE *Pseudacris regilla*  
 SW seasonal wetland  
 SWS seasonal wetland swale  
 T trash

TT tire tracks  
 UG ungrazed  
 US upland swale  
 VP vernal pool



ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition |                      |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|-------------------|----------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                   | Diptera Chironomidae |
| SW-13                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Cloudy             | SW-13        | 4259966        | 659288        | 0           | 0          | 0.0          | 0.0           | 0                    | 45        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| SW-13                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | SW-13        | 4259966        | 659288        | 0           | 0          | 0            | 0             | 0                    | 45        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| SW-13                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | SW-13        | 4259966        | 659288        | 0           | 0          | 0            | 0             | 0                    | 45        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| SW-13                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SW-13        | 4259966        | 659288        | 0           | 0          | 0            | 0             | 0                    | 45        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| SW-13                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SW-13        | 4259966        | 659288        | 0           | 0          | 0            | 0             | 0                    | 45        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| SW-13                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-13        | 4259966        | 659288        | 0           | 0          | 0            | 0             | 0                    | 45        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| SW-13                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-13        | 4259966        | 659288        | 0           | 0          | 0            | 0             | 0                    | 45        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| SW-14                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Cloudy             | SW-14        | 4259906        | 659402        | 0           | 0          | 0.0          | 0.0           | 0                    | 108       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| SW-14                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | SW-14        | 4259906        | 659402        | 0           | 0          | 0            | 0             | 0                    | 108       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| SW-14                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | SW-14        | 4259906        | 659402        | 0           | 0          | 0            | 0             | 0                    | 108       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| SW-14                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SW-14        | 4259906        | 659402        | 0           | 0          | 0            | 0             | 0                    | 108       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| SW-14                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SW-14        | 4259906        | 659402        | 0           | 0          | 0            | 0             | 0                    | 108       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| SW-14                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-14        | 4259906        | 659402        | 0           | 0          | 0            | 0             | 0                    | 108       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| SW-14                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-14        | 4259906        | 659402        | 0           | 0          | 0            | 0             | 0                    | 108       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| SW-15                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Cloudy             | SW-15        | 4259838        | 659347        | 14.0        | 17.0       | 7.6          | 17.8          | 20.0                 | 1,169     |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |

|      |                             |     |                             |      |                                 |    |                  |      |                           |    |              |
|------|-----------------------------|-----|-----------------------------|------|---------------------------------|----|------------------|------|---------------------------|----|--------------|
| C    | cattle                      | ED  | ephemeral drainage          | HG   | heavy grazing                   | MG | moderate grazing | PSRE | <i>Pseudocris regilla</i> | TT | tire tracks  |
| CYCA | <i>Cyzicus californicus</i> | FEW | freshwater emergent wetland | ID   | intermittent drainage           | P  | pond             | SW   | seasonal wetland          | UG | ungrazed     |
| D    | ditch                       | G   | grazed                      | LG   | light grazing                   | P  | plowed           | SWS  | seasonal wetland swale    | US | upland swale |
| D    | disturbed                   | H   | horse                       | LIOC | <i>Linderiella occidentalis</i> | PF | ponded feature   | T    | trash                     | VP | vernal pool  |

ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   |                      | Platyhelminths (flatworms) | Habitat Condition  |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------|----------------------------|--------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae | Diptera Chironomidae |                            |                    |
| SW-15                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | SW-15        | 4259838        | 659347        | 11.8        | 10.5       | 10.0         | 16.0          | 9.0                  | 1,169     |             |              |          |           | x         |            |           |                   |                      | x                          | Grassland-G: C- MG |
| SW-15                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | SW-15        | 4259838        | 659347        | 0           | 0          | 0            | 0             | 0                    | 1,169     |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SW-15                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SW-15        | 4259838        | 659347        | 0           | 0          | 0            | 0             | 0                    | 1,169     |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SW-15                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SW-15        | 4259838        | 659347        | 0           | 0          | 0            | 0             | 0                    | 1,169     |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SW-15                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-15        | 4259838        | 659347        | 0           | 0          | 0            | 0             | 0                    | 1,169     |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SW-15                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-15        | 4259838        | 659347        | 0           | 0          | 0            | 0             | 0                    | 1,169     |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SW-16                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Cloudy             | SW-16        | 4259874        | 659276        | 0           | 0          | 0.0          | 0.0           | 0                    | 367       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SW-16                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | SW-16        | 4259874        | 659276        | 0           | 0          | 0            | 0             | 0                    | 367       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SW-16                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | SW-16        | 4259874        | 659276        | 0           | 0          | 0            | 0             | 0                    | 367       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SW-16                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SW-16        | 4259874        | 659276        | 0           | 0          | 0            | 0             | 0                    | 367       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SW-16                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SW-16        | 4259874        | 659276        | 0           | 0          | 0            | 0             | 0                    | 367       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SW-16                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-16        | 4259874        | 659276        | 0           | 0          | 0            | 0             | 0                    | 367       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SW-16                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-16        | 4259874        | 659276        | 0           | 0          | 0            | 0             | 0                    | 367       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SW-17                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Cloudy             | SW-17        | 4259934        | 659283        | 13.0        | 16.0       | 5.1          | 12.7          | 15.0                 | 492       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- LG |
| SW-17                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | SW-17        | 4259934        | 659283        | 0           | 0          | 0            | 0             | 0                    | 492       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- LG |

C cattle  
 CYCA *Cyzicus californicus*  
 D ditch  
 D disturbed

ED ephemeral drainage  
 FEW freshwater emergent wetland  
 G grazed  
 H horse

HG heavy grazing  
 ID intermittent drainage  
 LG light grazing  
 LIOC *Linderiella occidentalis*

MG moderate grazing  
 P pond  
 P plowed  
 PF ponded feature

PSRE *Pseudocris regilla*  
 SW seasonal wetland  
 SWS seasonal wetland swale  
 T trash

TT tire tracks  
 UG ungrazed  
 US upland swale  
 VP vernal pool



ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition |                      |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|-------------------|----------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                   | Diptera Chironomidae |
| SW-17                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | SW-17        | 4259934        | 659283        | 0           | 0          | 0            | 0             | 0                    | 492       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SW-17                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SW-17        | 4259934        | 659283        | 0           | 0          | 0            | 0             | 0                    | 492       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SW-17                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SW-17        | 4259934        | 659283        | 0           | 0          | 0            | 0             | 0                    | 492       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SW-17                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-17        | 4259934        | 659283        | 0           | 0          | 0            | 0             | 0                    | 492       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SW-17                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-17        | 4259934        | 659283        | 0           | 0          | 0            | 0             | 0                    | 492       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SW-18                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Cloudy             | SW-18        | 4259767        | 659363        | 15.0        | 17.0       | 5.1          | 10.2          | 10.0                 | 537       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| SW-18                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | SW-18        | 4259767        | 659363        | 0           | 0          | 0            | 0             | 0                    | 537       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| SW-18                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | SW-18        | 4259767        | 659363        | 0           | 0          | 0            | 0             | 0                    | 537       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| SW-18                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SW-18        | 4259767        | 659363        | 0           | 0          | 0            | 0             | 0                    | 537       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| SW-18                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SW-18        | 4259767        | 659363        | 0           | 0          | 0            | 0             | 0                    | 537       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| SW-18                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-18        | 4259767        | 659363        | 0           | 0          | 0            | 0             | 0                    | 537       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| SW-18                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-18        | 4259767        | 659363        | 0           | 0          | 0            | 0             | 0                    | 537       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| SW-19                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Cloudy             | SW-19        | 4259790        | 659314        | 15.0        | 17.0       | 5.1          | 10.2          | 5.0                  | 27,471    |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| SW-19                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | SW-19        | 4259790        | 659314        | 0           | 0          | 0            | 0             | 0                    | 27,471    |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| SW-19                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | SW-19        | 4259790        | 659314        | 0           | 0          | 0            | 0             | 0                    | 27,471    |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |

|      |                             |     |                             |      |                                 |    |                  |      |                           |    |              |
|------|-----------------------------|-----|-----------------------------|------|---------------------------------|----|------------------|------|---------------------------|----|--------------|
| C    | cattle                      | ED  | ephemeral drainage          | HG   | heavy grazing                   | MG | moderate grazing | PSRE | <i>Pseudacris regilla</i> | TT | tire tracks  |
| CYCA | <i>Cyzicus californicus</i> | FEW | freshwater emergent wetland | ID   | intermittent drainage           | P  | pond             | SW   | seasonal wetland          | UG | ungrazed     |
| D    | ditch                       | G   | grazed                      | LG   | light grazing                   | P  | plowed           | SWS  | seasonal wetland swale    | US | upland swale |
| D    | disturbed                   | H   | horse                       | LIOC | <i>Linderiella occidentalis</i> | PF | ponded feature   | T    | trash                     | VP | vernal pool  |

ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition |                      |                    |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|-------------------|----------------------|--------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                   | Diptera Chironomidae |                    |
| SW-19                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SW-19        | 4259790        | 659314        | 0           | 0          | 0            | 0             | 0                    | 27,471    |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |                    |
| SW-19                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SW-19        | 4259790        | 659314        | 0           | 0          | 0            | 0             | 0                    | 27,471    |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- MG |
| SW-19                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-19        | 4259790        | 659314        | 0           | 0          | 0            | 0             | 0                    | 27,471    |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- MG |
| SW-19                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-19        | 4259790        | 659314        | 0           | 0          | 0            | 0             | 0                    | 27,471    |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- MG |
| SW-20                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Cloudy             | SW-20        | 4260118        | 659368        | 0           | 0          | 0            | 0             | 0                    | 110       |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- MG |
| SW-20                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | SW-20        | 4260118        | 659368        | 0           | 0          | 0            | 0             | 0                    | 110       |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- MG |
| SW-20                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | SW-20        | 4260118        | 659368        | 0           | 0          | 0            | 0             | 0                    | 110       |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- MG |
| SW-20                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SW-20        | 4260118        | 659368        | 0           | 0          | 0            | 0             | 0                    | 110       |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- MG |
| SW-20                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SW-20        | 4260118        | 659368        | 0           | 0          | 0            | 0             | 0                    | 110       |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- MG |
| SW-20                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-20        | 4260118        | 659368        | 0           | 0          | 0            | 0             | 0                    | 110       |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- MG |
| SW-20                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-20        | 4260118        | 659368        | 0           | 0          | 0            | 0             | 0                    | 110       |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- MG |
| SW-21                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Cloudy             | SW-21        | 4259376        | 659209        | 0           | 0          | 0.0          | 0.0           | 0                    | 31        |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- LG |
| SW-21                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | SW-21        | 4259376        | 659209        | 0           | 0          | 0            | 0             | 0                    | 31        |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- LG |
| SW-21                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | SW-21        | 4259376        | 659209        | 0           | 0          | 0            | 0             | 0                    | 31        |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- LG |
| SW-21                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SW-21        | 4259376        | 659209        | 0           | 0          | 0            | 0             | 0                    | 31        |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- LG |

C cattle  
 CYCA *Cyzicus californicus*  
 D ditch  
 D disturbed

ED ephemeral drainage  
 FEW freshwater emergent wetland  
 G grazed  
 H horse

HG heavy grazing  
 ID intermittent drainage  
 LG light grazing  
 LIOC *Linderiella occidentalis*

MG moderate grazing  
 P pond  
 P plowed  
 PF ponded feature

PSRE *Pseudacris regilla*  
 SW seasonal wetland  
 SWS seasonal wetland swale  
 T trash

TT tire tracks  
 UG ungrazed  
 US upland swale  
 VP vernal pool



ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   |                      | Platyhelminths (flatworms) | Habitat Condition  |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------|----------------------------|--------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae | Diptera Chironomidae |                            |                    |
| SW-21                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SW-21        | 4259376        | 659209        | 0           | 0          | 0            | 0             | 0                    | 31        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- LG |
| SW-21                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-21        | 4259376        | 659209        | 0           | 0          | 0            | 0             | 0                    | 31        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- LG |
| SW-21                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-21        | 4259376        | 659209        | 0           | 0          | 0            | 0             | 0                    | 31        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- LG |
| SW-22                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Cloudy             | SW-22        | 4259316        | 659136        | 11.0        | 10.0       | 5.1          | 12.7          | 3.0                  | 377       |             |              |          |           |           | x          |           |                   |                      |                            | Grassland-G: C- MG |
| SW-22                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | SW-22        | 4259316        | 659136        | 13.6        | 12.8       | 6.0          | 10.0          | 6.0                  | 377       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SW-22                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | SW-22        | 4259316        | 659136        | 0           | 0          | 0            | 0             | 0                    | 377       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SW-22                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SW-22        | 4259316        | 659136        | 0           | 0          | 0            | 0             | 0                    | 377       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SW-22                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SW-22        | 4259316        | 659136        | 0           | 0          | 0            | 0             | 0                    | 377       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SW-22                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-22        | 4259316        | 659136        | 0           | 0          | 0            | 0             | 0                    | 377       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SW-22                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-22        | 4259316        | 659136        | 0           | 0          | 0            | 0             | 0                    | 377       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SW-23                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Cloudy             | SW-23        | 4259271        | 659100        | 11.0        | 11.0       | 5.1          | 7.6           | 1.0                  | 133       |             |              | x        | x         | x         | x          | x         | x                 | x                    | x                          | Grassland-G: C- MG |
| SW-23                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | SW-23        | 4259271        | 659100        | 0           | 0          | 0            | 0             | 0                    | 133       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SW-23                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | SW-23        | 4259271        | 659100        | 0           | 0          | 0            | 0             | 0                    | 133       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SW-23                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SW-23        | 4259271        | 659100        | 0           | 0          | 0            | 0             | 0                    | 133       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SW-23                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SW-23        | 4259271        | 659100        | 0           | 0          | 0            | 0             | 0                    | 133       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |

C cattle  
 CYCA *Cyzicus californicus*  
 D ditch  
 D disturbed

ED ephemeral drainage  
 FEW freshwater emergent wetland  
 G grazed  
 H horse

HG heavy grazing  
 ID intermittent drainage  
 LG light grazing  
 LIOC *Linderiella occidentalis*

MG moderate grazing  
 P pond  
 P plowed  
 PF ponded feature

PSRE *Pseudacris regilla*  
 SW seasonal wetland  
 SWS seasonal wetland swale  
 T trash

TT tire tracks  
 UG ungrazed  
 US upland swale  
 VP vernal pool

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 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition |                      |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|-------------------|----------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                   | Diptera Chironomidae |
| SW-23                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-23        | 4259271        | 659100        | 0           | 0          | 0            | 0             | 0                    | 133       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| SW-23                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-23        | 4259271        | 659100        | 0           | 0          | 0            | 0             | 0                    | 133       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| SW-24                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Cloudy             | SW-24        | 4259806        | 658909        | 9.0         | 7.0        | 10.2         | 20.3          | 25.0                 | 10,099    |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| SW-24                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | SW-24        | 4259806        | 658909        | 16.2        | 15.9       | 12.0         | 17.0          | 13.0                 | 10,099    |             |              |          |           | x         |            |           |                   |                            | x                 | Grassland-G: C- HG   |
| SW-24                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | SW-24        | 4259806        | 658909        | 0           | 0          | 0            | 0             | 0                    | 10,099    |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| SW-24                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SW-24        | 4259806        | 658909        | 0           | 0          | 0            | 0             | 0                    | 10,099    |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| SW-24                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SW-24        | 4259806        | 658909        | 0           | 0          | 0            | 0             | 0                    | 10,099    |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| SW-24                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-24        | 4259806        | 658909        | 0           | 0          | 0            | 0             | 0                    | 10,099    |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| SW-24                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-24        | 4259806        | 658909        | 0           | 0          | 0            | 0             | 0                    | 10,099    |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| SW-25                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Cloudy             | SW-25        | 4259922        | 659100        | 0           | 0          | 0.0          | 0.0           | 0                    | 69        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SW-25                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | SW-25        | 4259922        | 659100        | 0           | 0          | 0            | 0             | 0                    | 69        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SW-25                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | SW-25        | 4259922        | 659100        | 0           | 0          | 0            | 0             | 0                    | 69        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SW-25                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SW-25        | 4259922        | 659100        | 0           | 0          | 0            | 0             | 0                    | 69        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SW-25                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SW-25        | 4259922        | 659100        | 0           | 0          | 0            | 0             | 0                    | 69        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SW-25                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-25        | 4259922        | 659100        | 0           | 0          | 0            | 0             | 0                    | 69        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |

|      |                             |     |                             |      |                                 |    |                  |      |                           |    |              |
|------|-----------------------------|-----|-----------------------------|------|---------------------------------|----|------------------|------|---------------------------|----|--------------|
| C    | cattle                      | ED  | ephemeral drainage          | HG   | heavy grazing                   | MG | moderate grazing | PSRE | <i>Pseudacris regilla</i> | TT | tire tracks  |
| CYCA | <i>Cyzicus californicus</i> | FEW | freshwater emergent wetland | ID   | intermittent drainage           | P  | pond             | SW   | seasonal wetland          | UG | ungrazed     |
| D    | ditch                       | G   | grazed                      | LG   | light grazing                   | P  | plowed           | SWS  | seasonal wetland swale    | US | upland swale |
| D    | disturbed                   | H   | horse                       | LIOC | <i>Linderiella occidentalis</i> | PF | ponded feature   | T    | trash                     | VP | vernal pool  |



ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition  |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|--------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                    |
| SW-25                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-25        | 4259922        | 659100        | 0           | 0          | 0            | 0             | 0                    | 69        |             |              |          |           |           |            |           |                   |                            | Grassland-G: C- LG |
| SW-26                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Cloudy             | SW-26        | 4259896        | 659120        | 0           | 0          | 0.0          | 0.0           | 0                    | 58        |             |              |          |           |           |            |           |                   |                            | Grassland-G: C- LG |
| SW-26                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | SW-26        | 4259896        | 659120        | 0           | 0          | 0            | 0             | 0                    | 58        |             |              |          |           |           |            |           |                   |                            | Grassland-G: C- LG |
| SW-26                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | SW-26        | 4259896        | 659120        | 0           | 0          | 0            | 0             | 0                    | 58        |             |              |          |           |           |            |           |                   |                            | Grassland-G: C- LG |
| SW-26                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SW-26        | 4259896        | 659120        | 0           | 0          | 0            | 0             | 0                    | 58        |             |              |          |           |           |            |           |                   |                            | Grassland-G: C- LG |
| SW-26                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SW-26        | 4259896        | 659120        | 0           | 0          | 0            | 0             | 0                    | 58        |             |              |          |           |           |            |           |                   |                            | Grassland-G: C- LG |
| SW-26                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-26        | 4259896        | 659120        | 0           | 0          | 0            | 0             | 0                    | 58        |             |              |          |           |           |            |           |                   |                            | Grassland-G: C- LG |
| SW-26                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-26        | 4259896        | 659120        | 0           | 0          | 0            | 0             | 0                    | 58        |             |              |          |           |           |            |           |                   |                            | Grassland-G: C- LG |
| SW-27                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Cloudy             | SW-27        | 4259847        | 659134        | 0           | 0          | 0.0          | 0.0           | 0                    | 142       |             |              |          |           |           |            |           |                   |                            | Grassland-G: C- MG |
| SW-27                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | SW-27        | 4259847        | 659134        | 0           | 0          | 0            | 0             | 0                    | 142       |             |              |          |           |           |            |           |                   |                            | Grassland-G: C- MG |
| SW-27                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | SW-27        | 4259847        | 659134        | 0           | 0          | 0            | 0             | 0                    | 142       |             |              |          |           |           |            |           |                   |                            | Grassland-G: C- MG |
| SW-27                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SW-27        | 4259847        | 659134        | 0           | 0          | 0            | 0             | 0                    | 142       |             |              |          |           |           |            |           |                   |                            | Grassland-G: C- MG |
| SW-27                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SW-27        | 4259847        | 659134        | 0           | 0          | 0            | 0             | 0                    | 142       |             |              |          |           |           |            |           |                   |                            | Grassland-G: C- MG |
| SW-27                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-27        | 4259847        | 659134        | 0           | 0          | 0            | 0             | 0                    | 142       |             |              |          |           |           |            |           |                   |                            | Grassland-G: C- MG |
| SW-27                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-27        | 4259847        | 659134        | 0           | 0          | 0            | 0             | 0                    | 142       |             |              |          |           |           |            |           |                   |                            | Grassland-G: C- MG |

C cattle  
 CYCA *Cyzicus californicus*  
 D ditch  
 D disturbed

ED ephemeral drainage  
 FEW freshwater emergent wetland  
 G grazed  
 H horse

HG heavy grazing  
 ID intermittent drainage  
 LG light grazing  
 LIOC *Linderiella occidentalis*

MG moderate grazing  
 P pond  
 P plowed  
 PF ponded feature

PSRE *Pseudacris regilla*  
 SW seasonal wetland  
 SWS seasonal wetland swale  
 T trash

TT tire tracks  
 UG ungrazed  
 US upland swale  
 VP vernal pool

ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                      |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition |                          |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|----------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|-------------------|--------------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions   | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                   | Diptera Chironomidae     |
| SW-28                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Precipitation - Full | SW-28        | 4260343        | 659074        | 11.0        | 11.0       | 17.8         | 43.2          | 100.0                | 154       |             |              |          |           |           | x          |           |                   |                            |                   | Grassland-G: C- MG       |
| SW-28                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear                | SW-28        | 4260343        | 659074        | 16.1        | 15.5       | 18.0         | 38.0          | 36.0                 | 154       | LIOC        |              |          | x         | x         | x          |           |                   |                            | x                 | Grassland-G: C- MG       |
| SW-28                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy               | SW-28        | 4260343        | 659074        | 17.1        | 13.5       | 7.0          | 15.0          | 12.0                 | 154       |             |              |          | x         | x         | x          |           |                   | x                          | x                 | Grassland-G: C- MG       |
| SW-28                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy               | SW-28        | 4260343        | 659074        | 0           | 0          | 0            | 0             | 0                    | 154       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG       |
| SW-28                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear                | SW-28        | 4260343        | 659074        | 0           | 0          | 0            | 0             | 0                    | 154       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-D: P; G: C- MG |
| SW-28                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear                | SW-28        | 4260343        | 659074        | 0           | 0          | 0            | 0             | 0                    | 154       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-D: P; G: C- MG |
| SW-28                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear                | SW-28        | 4260343        | 659074        | 0           | 0          | 0            | 0             | 0                    | 154       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-D: P; G: C- MG |
| SW-29                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Precipitation - Full | SW-29        | 4260515        | 658681        | 11.0        | 11.0       | 22.9         | 43.2          | 96.0                 | 96        |             |              |          | x         |           | x          |           |                   | x                          |                   | Grassland-G: C- MG       |
| SW-29                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear                | SW-29        | 4260515        | 658681        | 0           | 0          | 0            | 0             | 0                    | 96        |             |              |          |           |           | x          |           | x                 |                            |                   | Grassland-G: C- MG       |
| SW-29                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy               | SW-29        | 4260515        | 658681        | 17.2        | 15.5       | 24.0         | 30.0          | 25.0                 | 96        |             |              |          |           |           | x          |           | x                 | x                          |                   | Grassland-G: C- MG       |
| SW-29                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy               | SW-29        | 4260515        | 658681        | 15.7        | 19.6       | 20.0         | 28.0          | 25.0                 | 96        |             |              |          | x         |           | x          | x         |                   |                            |                   | Grassland-G: C- MG       |
| SW-29                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear                | SW-29        | 4260515        | 658681        | 26.0        | 25.1       | 15.0         | 30.0          | 15.0                 | 96        |             |              |          | x         | x         |            | x         |                   |                            |                   | Grassland-G: C- MG       |
| SW-29                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear                | SW-29        | 4260515        | 658681        | 0           | 0          | 0            | 0             | 0                    | 96        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG       |
| SW-29                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear                | SW-29        | 4260515        | 658681        | 0           | 0          | 0            | 0             | 0                    | 96        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG       |

|      |                             |     |                             |      |                                 |    |                  |      |                           |    |              |
|------|-----------------------------|-----|-----------------------------|------|---------------------------------|----|------------------|------|---------------------------|----|--------------|
| C    | cattle                      | ED  | ephemeral drainage          | HG   | heavy grazing                   | MG | moderate grazing | PSRE | <i>Pseudacris regilla</i> | TT | tire tracks  |
| CYCA | <i>Cyzicus californicus</i> | FEW | freshwater emergent wetland | ID   | intermittent drainage           | P  | pond             | SW   | seasonal wetland          | UG | ungrazed     |
| D    | ditch                       | G   | grazed                      | LG   | light grazing                   | P  | plowed           | SWS  | seasonal wetland swale    | US | upland swale |
| D    | disturbed                   | H   | horse                       | LIOC | <i>Linderiella occidentalis</i> | PF | ponded feature   | T    | trash                     | VP | vernal pool  |



ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                      |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   |                      | Platyhelminths (flatworms) | Habitat Condition  |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|----------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------|----------------------------|--------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions   | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae | Diptera Chironomidae |                            |                    |
| SW-30                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Precipitation - Full | SW-30        | 4260499        | 658472        | 12.0        | 11.0       | 20.3         | 43.2          | 300.0                | 381       |             |              |          | x         |           | x          |           |                   |                      |                            | Grassland-G: C- MG |
| SW-30                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear                | SW-30        | 4260499        | 658472        | 17.2        | 15.5       | 30.0         | 48.0          | 40.0                 | 381       |             |              |          | x         |           | x          |           |                   |                      |                            | Grassland-G: C- MG |
| SW-30                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy               | SW-30        | 4260499        | 658472        | 15.1        | 13.3       | 10.0         | 25.0          | 30.0                 | 381       |             |              |          | x         | x         |            |           |                   |                      | x                          | Grassland-G: C- MG |
| SW-30                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy               | SW-30        | 4260499        | 658472        | 13.3        | 19.7       | 20.0         | 25.0          | 20.0                 | 381       |             |              |          | x         | x         |            |           |                   |                      | x                          | Grassland-G: C- MG |
| SW-30                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear                | SW-30        | 4260499        | 658472        | 24.0        | 26.6       | 5.0          | 10.0          | 1.0                  | 381       |             |              |          | x         | x         | x          |           |                   | x                    | x                          | Grassland-G: C- MG |
| SW-30                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear                | SW-30        | 4260499        | 658472        | 0           | 0          | 0            | 0             | 0                    | 381       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SW-30                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear                | SW-30        | 4260499        | 658472        | 0           | 0          | 0            | 0             | 0                    | 381       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SW-31                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Cloudy               | SW-31        | 4259990        | 658104        | 12.0        | 13.0       | 10.2         | 17.8          | 50.0                 | 6,852     |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SW-31                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear                | SW-31        | 4259990        | 658104        | 15.8        | 14.6       | 8.0          | 15.0          | 9.0                  | 6,852     |             |              |          | x         |           | x          |           |                   |                      |                            | Grassland-G: C- HG |
| SW-31                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy               | SW-31        | 4259990        | 658104        | 0           | 0          | 0            | 0             | 0                    | 6,852     |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SW-31                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy               | SW-31        | 4259990        | 658104        | 0           | 0          | 0            | 0             | 0                    | 6,852     |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SW-31                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear                | SW-31        | 4259990        | 658104        | 0           | 0          | 0            | 0             | 0                    | 6,852     |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SW-31                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear                | SW-31        | 4259990        | 658104        | 0           | 0          | 0            | 0             | 0                    | 6,852     |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SW-31                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear                | SW-31        | 4259990        | 658104        | 0           | 0          | 0            | 0             | 0                    | 6,852     |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SW-32                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear                | SW-32        | 4260149        | 658537        | 0           | 0          | 0.0          | 0.0           | 0                    | 287       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |

C cattle  
 CYCA *Cyzicus californicus*  
 D ditch  
 D disturbed

ED ephemeral drainage  
 FEW freshwater emergent wetland  
 G grazed  
 H horse

HG heavy grazing  
 ID intermittent drainage  
 LG light grazing  
 LIOC *Linderiella occidentalis*

MG moderate grazing  
 P pond  
 P plowed  
 PF ponded feature

PSRE *Pseudocris regilla*  
 SW seasonal wetland  
 SWS seasonal wetland swale  
 T trash

TT tire tracks  
 UG ungrazed  
 US upland swale  
 VP vernal pool

ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                         |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   |                      | Platyhelminths (flatworms) | Habitat Condition  |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|-------------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------|----------------------------|--------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions      | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae | Diptera Chironomidae |                            |                    |
| SW-32                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear                   | SW-32        | 4260149        | 658537        | 0           | 0          | 0            | 0             | 0                    | 287       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SW-32                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy                  | SW-32        | 4260149        | 658537        | 0           | 0          | 0            | 0             | 0                    | 287       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SW-32                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy                  | SW-32        | 4260149        | 658537        | 0           | 0          | 0            | 0             | 0                    | 287       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SW-32                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear                   | SW-32        | 4260149        | 658537        | 0           | 0          | 0            | 0             | 0                    | 287       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SW-32                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear                   | SW-32        | 4260149        | 658537        | 0           | 0          | 0            | 0             | 0                    | 287       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SW-32                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear                   | SW-32        | 4260149        | 658537        | 0           | 0          | 0            | 0             | 0                    | 287       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SW-33                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Precipitation - Drizzle | SW-33        | 4259851        | 658249        | 12.0        | 13.0       | 20.3         | 35.6          | 101.0                | 101       |             |              |          |           |           | x          |           |                   |                      |                            | Grassland-G: C- HG |
| SW-33                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/19/2021 | 0800-1700 | Cloudy                  | SW-33        | 4259851        | 658249        | 12.0        | 14.0       | 12.0         | 26.0          | 30.0                 | 101       |             |              |          | x         | x         |            |           | x                 |                      |                            | Grassland-G: C- HG |
| SW-33                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear                   | SW-33        | 4259851        | 658249        | 15.8        | 18.9       | 20.0         | 30.0          | 20.0                 | 101       |             |              |          | x         | x         |            |           |                   | x                    |                            | Grassland-G: C- HG |
| SW-33                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy                  | SW-33        | 4259851        | 658249        | 15.3        | 14.1       | 15.0         | 25.0          | 0                    | 101       |             |              |          | x         | x         |            |           |                   | x                    | x                          | Grassland-G: C- HG |
| SW-33                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear                   | SW-33        | 4259851        | 658249        | 22.6        | 21.7       | 7.0          | 13.0          | 1.0                  | 101       |             |              |          | x         | x         | x          |           |                   | x                    |                            | Grassland-G: C- HG |
| SW-33                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear                   | SW-33        | 4259851        | 658249        | 0           | 0          | 0            | 0             | 0                    | 101       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SW-33                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear                   | SW-33        | 4259851        | 658249        | 29.9        | 30.2       | 15.0         | 25.0          | 20.0                 | 101       |             |              |          |           |           |            | x         |                   |                      |                            | Grassland-G: C- HG |
| SW-34                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear                   | SW-34        | 4259834        | 658196        | 10.0        | 8.0        | 12.7         | 25.4          | 10.0                 | 14        |             |              | x        |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SW-34                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/19/2021 | 0800-1700 | Cloudy                  | SW-34        | 4259834        | 658196        | 13.0        | 0          | 15.0         | 20.0          | 15.0                 | 14        |             |              |          |           | x         | x          |           |                   |                      | x                          | Grassland-G: C- HG |

|      |                             |     |                             |      |                                 |    |                  |      |                           |    |              |
|------|-----------------------------|-----|-----------------------------|------|---------------------------------|----|------------------|------|---------------------------|----|--------------|
| C    | cattle                      | ED  | ephemeral drainage          | HG   | heavy grazing                   | MG | moderate grazing | PSRE | <i>Pseudacris regilla</i> | TT | tire tracks  |
| CYCA | <i>Cyzicus californicus</i> | FEW | freshwater emergent wetland | ID   | intermittent drainage           | P  | pond             | SW   | seasonal wetland          | UG | ungrazed     |
| D    | ditch                       | G   | grazed                      | LG   | light grazing                   | P  | plowed           | SWS  | seasonal wetland swale    | US | upland swale |
| D    | disturbed                   | H   | horse                       | LIOC | <i>Linderiella occidentalis</i> | PF | ponded feature   | T    | trash                     | VP | vernal pool  |



ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   |                      | Platyhelminths (flatworms) | Habitat Condition  |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------|----------------------------|--------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae | Diptera Chironomidae |                            |                    |
| SW-34                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | SW-34        | 4259834        | 658196        | 14.0        | 17.5       | 5.0          | 15.0          | 5.0                  | 14        |             |              |          | x         |           | x          |           |                   |                      | x                          | Grassland-G: C- HG |
| SW-34                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy             | SW-34        | 4259834        | 658196        | 0           | 0          | 0            | 0             | 0                    | 14        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SW-34                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear              | SW-34        | 4259834        | 658196        | 22.8        | 16.5       | 8.0          | 10.0          | 1.0                  | 14        |             |              |          | x         |           |            |           |                   |                      | x                          | Grassland-G: C- HG |
| SW-34                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-34        | 4259834        | 658196        | 0           | 0          | 0            | 0             | 0                    | 14        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SW-34                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-34        | 4259834        | 658196        | 30.2        | 27.9       | 13.0         | 28.0          | 4.0                  | 14        |             |              |          |           | x         |            | x         |                   |                      |                            | Grassland-G: C- HG |
| SW-35                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear              | SW-35        | 4259876        | 658167        | 12.0        | 10.0       | 5.1          | 10.2          | 15.0                 | 35        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SW-35                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/19/2021 | 0800-1700 | Cloudy             | SW-35        | 4259876        | 658167        | 12.4        | 13.9       | 8.0          | 14.0          | 3.0                  | 35        |             |              |          | x         |           |            |           |                   | x                    | x                          | Grassland-G: C- HG |
| SW-35                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | SW-35        | 4259876        | 658167        | 0           | 0          | 0            | 0             | 0                    | 35        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SW-35                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy             | SW-35        | 4259876        | 658167        | 0           | 0          | 0            | 0             | 0                    | 35        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SW-35                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear              | SW-35        | 4259876        | 658167        | 0           | 0          | 0            | 0             | 0                    | 35        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SW-35                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-35        | 4259876        | 658167        | 0           | 0          | 0            | 0             | 0                    | 35        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SW-35                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-35        | 4259876        | 658167        | 29.9        | 28.7       | 10.0         | 13.0          | 6.0                  | 35        |             |              |          |           |           | x          | x         |                   |                      |                            | Grassland-G: C- HG |
| SW-36                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear              | SW-36        | 4259713        | 658231        | 9.0         | 6.0        | 12.7         | 25.4          | 10.0                 | 104       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SW-36                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/19/2021 | 0800-1700 | Cloudy             | SW-36        | 4259713        | 658231        | 14.0        | 15.0       | 7.0          | 25.0          | 5.0                  | 104       |             |              |          | x         |           |            |           |                   |                      | x                          | Grassland-G: C- HG |
| SW-36                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | SW-36        | 4259713        | 658231        | 0           | 0          | 0            | 0             | 0                    | 104       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |

C cattle  
 CYCA *Cyzicus californicus*  
 D ditch  
 D disturbed

ED ephemeral drainage  
 FEW freshwater emergent wetland  
 G grazed  
 H horse

HG heavy grazing  
 ID intermittent drainage  
 LG light grazing  
 LIOC *Linderiella occidentalis*

MG moderate grazing  
 P pond  
 P plowed  
 PF ponded feature

PSRE *Pseudacris regilla*  
 SW seasonal wetland  
 SWS seasonal wetland swale  
 T trash

TT tire tracks  
 UG ungrazed  
 US upland swale  
 VP vernal pool

ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                      |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition |                      |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|----------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|-------------------|----------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions   | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                   | Diptera Chironomidae |
| SW-36                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy               | SW-36        | 4259713        | 658231        | 0           | 0          | 0            | 0             | 0                    | 104       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| SW-36                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear                | SW-36        | 4259713        | 658231        | 0           | 0          | 0            | 0             | 0                    | 104       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| SW-36                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear                | SW-36        | 4259713        | 658231        | 0           | 0          | 0            | 0             | 0                    | 104       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| SW-36                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear                | SW-36        | 4259713        | 658231        | 0           | 0          | 0            | 0             | 0                    | 104       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| SW-37                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear                | SW-37        | 4259742        | 657987        | 10.9        | 12.9       | 5.1          | 22.9          | 60.0                 | 4,067     |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SW-37                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 2/19/2021 | 0800-1700 | Precipitation - Full | SW-37        | 4259742        | 657987        | 12.0        | 11.0       | 10.0         | 30.0          | 50.0                 | 4,067     |             |              |          |           |           |            |           |                   |                            | x                 | Grassland-G: C- LG   |
| SW-37                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear                | SW-37        | 4259742        | 657987        | 0           | 0          | 0            | 0             | 0                    | 4,067     |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SW-37                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy               | SW-37        | 4259742        | 657987        | 0           | 0          | 0            | 0             | 0                    | 4,067     |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SW-37                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear                | SW-37        | 4259742        | 657987        | 0           | 0          | 0            | 0             | 0                    | 4,067     |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SW-37                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear                | SW-37        | 4259742        | 657987        | 0           | 0          | 0            | 0             | 0                    | 4,067     |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SW-37                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear                | SW-37        | 4259742        | 657987        | 0           | 0          | 0            | 0             | 0                    | 4,067     |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SW-38                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear                | SW-38        | 4260572        | 658352        | 16.0        | 18.0       | 7.6          | 20.3          | 24.0                 | 126       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| SW-38                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy        | SW-38        | 4260572        | 658352        | 17.6        | 17.1       | 15.0         | 28.0          | 15.0                 | 126       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| SW-38                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy               | SW-38        | 4260572        | 658352        | 0           | 0          | 0            | 0             | 0                    | 126       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| SW-38                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy               | SW-38        | 4260572        | 658352        | 0           | 0          | 0            | 0             | 0                    | 126       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |

|      |                             |     |                             |      |                                 |    |                  |      |                           |    |              |
|------|-----------------------------|-----|-----------------------------|------|---------------------------------|----|------------------|------|---------------------------|----|--------------|
| C    | cattle                      | ED  | ephemeral drainage          | HG   | heavy grazing                   | MG | moderate grazing | PSRE | <i>Pseudacris regilla</i> | TT | tire tracks  |
| CYCA | <i>Cyzicus californicus</i> | FEW | freshwater emergent wetland | ID   | intermittent drainage           | P  | pond             | SW   | seasonal wetland          | UG | ungrazed     |
| D    | ditch                       | G   | grazed                      | LG   | light grazing                   | P  | plowed           | SWS  | seasonal wetland swale    | US | upland swale |
| D    | disturbed                   | H   | horse                       | LIOC | <i>Linderiella occidentalis</i> | PF | ponded feature   | T    | trash                     | VP | vernal pool  |



ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   |                      | Platyhelminths (flatworms) | Habitat Condition  |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------|----------------------------|--------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae | Diptera Chironomidae |                            |                    |
| SW-38                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SW-38        | 4260572        | 658352        | 0           | 0          | 0            | 0             | 0                    | 126       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SW-38                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-38        | 4260572        | 658352        | 0           | 0          | 0            | 0             | 0                    | 126       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SW-38                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-38        | 4260572        | 658352        | 0           | 0          | 0            | 0             | 0                    | 126       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SW-39                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear              | SW-39        | 4260251        | 657911        | 0           | 0          | 0.0          | 0.0           | 0                    | 481       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SW-39                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | SW-39        | 4260251        | 657911        | 0           | 0          | 0            | 0             | 0                    | 481       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SW-39                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | SW-39        | 4260251        | 657911        | 0           | 0          | 0            | 0             | 0                    | 481       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SW-39                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SW-39        | 4260251        | 657911        | 0           | 0          | 0            | 0             | 0                    | 481       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SW-39                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SW-39        | 4260251        | 657911        | 0           | 0          | 0            | 0             | 0                    | 481       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SW-39                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-39        | 4260251        | 657911        | 0           | 0          | 0            | 0             | 0                    | 481       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SW-39                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-39        | 4260251        | 657911        | 0           | 0          | 0            | 0             | 0                    | 481       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SW-40                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear              | SW-40        | 4260691        | 657933        | 16.0        | 21.0       | 12.7         | 15.2          | 10.0                 | 185       |             |              |          |           |           | x          |           |                   |                      |                            | Grassland-G: C- HG |
| SW-40                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | SW-40        | 4260691        | 657933        | 16.0        | 19.0       | 4.0          | 9.0           | 25.0                 | 185       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SW-40                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | SW-40        | 4260691        | 657933        | 16.7        | 16.9       | 2.0          | 4.0           | 2.0                  | 185       |             |              |          |           |           | x          |           |                   |                      |                            | Grassland-G: C- HG |
| SW-40                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SW-40        | 4260691        | 657933        | 0           | 0          | 0            | 0             | 0                    | 185       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SW-40                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SW-40        | 4260691        | 657933        | 0           | 0          | 0            | 0             | 0                    | 185       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |

|      |                             |     |                             |      |                                 |    |                  |      |                           |    |              |
|------|-----------------------------|-----|-----------------------------|------|---------------------------------|----|------------------|------|---------------------------|----|--------------|
| C    | cattle                      | ED  | ephemeral drainage          | HG   | heavy grazing                   | MG | moderate grazing | PSRE | <i>Pseudacris regilla</i> | TT | tire tracks  |
| CYCA | <i>Cyzicus californicus</i> | FEW | freshwater emergent wetland | ID   | intermittent drainage           | P  | pond             | SW   | seasonal wetland          | UG | ungrazed     |
| D    | ditch                       | G   | grazed                      | LG   | light grazing                   | P  | plowed           | SWS  | seasonal wetland swale    | US | upland swale |
| D    | disturbed                   | H   | horse                       | LIOC | <i>Linderiella occidentalis</i> | PF | ponded feature   | T    | trash                     | VP | vernal pool  |

ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition |                           |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|-------------------|---------------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                   | Diptera Chironomidae      |
| SW-40                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-40        | 4260691        | 657933        | 0           | 0          | 0            | 0             | 0                    | 185       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG        |
| SW-40                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-40        | 4260691        | 657933        | 0           | 0          | 0            | 0             | 0                    | 185       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG        |
| SW-41                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Cloudy             | SW-41        | 4259308        | 658830        | 16.0        | 14.0       | 5.1          | 10.2          | 2.0                  | 63        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| SW-41                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | SW-41        | 4259308        | 658830        | 0           | 0          | 0            | 0             | 0                    | 63        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| SW-41                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | SW-41        | 4259308        | 658830        | 0           | 0          | 0            | 0             | 0                    | 63        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| SW-41                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy             | SW-41        | 4259308        | 658830        | 0           | 0          | 0            | 0             | 0                    | 63        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| SW-41                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear              | SW-41        | 4259308        | 658830        | 0           | 0          | 0            | 0             | 0                    | 63        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| SW-41                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-41        | 4259308        | 658830        | 0           | 0          | 0            | 0             | 0                    | 63        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| SW-41                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-41        | 4259308        | 658830        | 0           | 0          | 0            | 0             | 0                    | 63        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| SW-42                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 2        | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear              | SW-42        | 4260952        | 658181        | 17.0        | 19.0       | 10.2         | 17.8          | 5.0                  | 945       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG, H- HG |
| SW-42                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 2        | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | SW-42        | 4260952        | 658181        | 17.1        | 16.4       | 12.0         | 19.0          | 3.0                  | 945       |             |              |          | x         |           |            |           |                   |                            |                   | Grassland-G: C- HG, H- HG |
| SW-42                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 2        | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | SW-42        | 4260952        | 658181        | 0           | 0          | 0            | 0             | 0                    | 945       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG, H- HG |
| SW-42                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 2        | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SW-42        | 4260952        | 658181        | 0           | 0          | 0            | 0             | 0                    | 945       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG, H- HG |
| SW-42                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 2        | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SW-42        | 4260952        | 658181        | 0           | 0          | 0            | 0             | 0                    | 945       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG, H- HG |

|      |                             |     |                             |      |                                 |    |                  |      |                           |    |              |
|------|-----------------------------|-----|-----------------------------|------|---------------------------------|----|------------------|------|---------------------------|----|--------------|
| C    | cattle                      | ED  | ephemeral drainage          | HG   | heavy grazing                   | MG | moderate grazing | PSRE | <i>Pseudacris regilla</i> | TT | tire tracks  |
| CYCA | <i>Cyzicus californicus</i> | FEW | freshwater emergent wetland | ID   | intermittent drainage           | P  | pond             | SW   | seasonal wetland          | UG | ungrazed     |
| D    | ditch                       | G   | grazed                      | LG   | light grazing                   | P  | plowed           | SWS  | seasonal wetland swale    | US | upland swale |
| D    | disturbed                   | H   | horse                       | LIOC | <i>Linderiella occidentalis</i> | PF | ponded feature   | T    | trash                     | VP | vernal pool  |



ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition |                           |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|-------------------|---------------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                   | Diptera Chironomidae      |
| SW-42                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 2        | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-42        | 4260952        | 658181        | 0           | 0          | 0            | 0             | 0                    | 945       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG, H- HG |
| SW-42                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 2        | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-42        | 4260952        | 658181        | 0           | 0          | 0            | 0             | 0                    | 945       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG, H- HG |
| SW-43                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Partly Cloudy      | SW-43        | 4258971        | 658561        | 14.0        | 16.0       | 7.6          | 15.2          | 5.0                  | 26        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| SW-43                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | SW-43        | 4258971        | 658561        | 16.3        | 11.2       | 7.0          | 10.0          | 2.0                  | 26        |             |              |          | x         | x         | x          |           |                   |                            | x                 | Grassland-G: C- LG        |
| SW-43                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | SW-43        | 4258971        | 658561        | 0           | 0          | 0            | 0             | 0                    | 26        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| SW-43                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy             | SW-43        | 4258971        | 658561        | 0           | 0          | 0            | 0             | 0                    | 26        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| SW-43                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear              | SW-43        | 4258971        | 658561        | 0           | 0          | 0            | 0             | 0                    | 26        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| SW-43                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-43        | 4258971        | 658561        | 0           | 0          | 0            | 0             | 0                    | 26        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| SW-43                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-43        | 4258971        | 658561        | 0           | 0          | 0            | 0             | 0                    | 26        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| SW-44                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Partly Cloudy      | SW-44        | 4258957        | 658533        | 15.0        | 11.6       | 7.6          | 12.7          | 5.0                  | 17        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| SW-44                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | SW-44        | 4258957        | 658533        | 15.5        | 12.8       | 5.0          | 13.0          | 3.0                  | 17        |             |              |          | x         | x         |            |           |                   |                            | x                 | Grassland-G: C- LG        |
| SW-44                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | SW-44        | 4258957        | 658533        | 0           | 0          | 0            | 0             | 0                    | 17        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| SW-44                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy             | SW-44        | 4258957        | 658533        | 0           | 0          | 0            | 0             | 0                    | 17        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| SW-44                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear              | SW-44        | 4258957        | 658533        | 0           | 0          | 0            | 0             | 0                    | 17        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| SW-44                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-44        | 4258957        | 658533        | 0           | 0          | 0            | 0             | 0                    | 17        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |

C cattle  
 CYCA *Cyzicus californicus*  
 D ditch  
 D disturbed

ED ephemeral drainage  
 FEW freshwater emergent wetland  
 G grazed  
 H horse

HG heavy grazing  
 ID intermittent drainage  
 LG light grazing  
 LIOC *Linderiella occidentalis*

MG moderate grazing  
 P pond  
 P plowed  
 PF ponded feature

PSRE *Pseudacris regilla*  
 SW seasonal wetland  
 SWS seasonal wetland swale  
 T trash

TT tire tracks  
 UG ungrazed  
 US upland swale  
 VP vernal pool

ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                      |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   |                      | Platyhelminths (flatworms) | Habitat Condition         |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|----------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------|----------------------------|---------------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions   | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae | Diptera Chironomidae |                            |                           |
| SW-44                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear                | SW-44        | 4258957        | 658533        | 0           | 0          | 0            | 0             | 0                    | 17        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- LG        |
| SW-45                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear                | SW-45        | 4259038        | 658323        | 11.0        | 13.0       | 7.6          | 12.7          | 2.0                  | 157       |             |              |          |           |           |            | x         |                   |                      |                            | Grassland-G: C- MG        |
| SW-45                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/19/2021 | 0800-1700 | Precipitation - Full | SW-45        | 4259038        | 658323        | 12.0        | 11.0       | 7.0          | 15.0          | 3.0                  | 157       |             |              |          | x         |           |            | x         |                   |                      | x                          | Grassland-G: C- MG        |
| SW-45                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear                | SW-45        | 4259038        | 658323        | 0           | 0          | 0            | 0             | 0                    | 157       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG        |
| SW-45                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy               | SW-45        | 4259038        | 658323        | 0           | 0          | 0            | 0             | 0                    | 157       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG        |
| SW-45                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear                | SW-45        | 4259038        | 658323        | 0           | 0          | 0            | 0             | 0                    | 157       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG        |
| SW-45                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear                | SW-45        | 4259038        | 658323        | 0           | 0          | 0            | 0             | 0                    | 157       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG        |
| SW-45                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear                | SW-45        | 4259038        | 658323        | 0           | 0          | 0            | 0             | 0                    | 157       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG        |
| SW-46                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear                | SW-46        | 4258852        | 658282        | 13.0        | 16.0       | 7.6          | 12.7          | 3.0                  | 25        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-D: TT; G: C- MG |
| SW-46                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/19/2021 | 0800-1700 | Cloudy               | SW-46        | 4258852        | 658282        | 13.0        | 13.0       | 0            | 0             | 4.0                  | 25        |             |              |          | x         |           |            |           |                   |                      | x                          | Grassland-D: TT; G: C- MG |
| SW-46                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear                | SW-46        | 4258852        | 658282        | 0           | 0          | 0            | 0             | 0                    | 25        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-D: TT; G: C- MG |
| SW-46                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy               | SW-46        | 4258852        | 658282        | 0           | 0          | 0            | 0             | 0                    | 25        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-D: TT; G: C- MG |
| SW-46                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear                | SW-46        | 4258852        | 658282        | 0           | 0          | 0            | 0             | 0                    | 25        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-D: TT; G: C- MG |
| SW-46                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear                | SW-46        | 4258852        | 658282        | 0           | 0          | 0            | 0             | 0                    | 25        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-D: TT; G: C- MG |

|      |                             |     |                             |      |                                 |    |                  |      |                           |    |              |
|------|-----------------------------|-----|-----------------------------|------|---------------------------------|----|------------------|------|---------------------------|----|--------------|
| C    | cattle                      | ED  | ephemeral drainage          | HG   | heavy grazing                   | MG | moderate grazing | PSRE | <i>Pseudacris regilla</i> | TT | tire tracks  |
| CYCA | <i>Cyzicus californicus</i> | FEW | freshwater emergent wetland | ID   | intermittent drainage           | P  | pond             | SW   | seasonal wetland          | UG | ungrazed     |
| D    | ditch                       | G   | grazed                      | LG   | light grazing                   | P  | plowed           | SWS  | seasonal wetland swale    | US | upland swale |
| D    | disturbed                   | H   | horse                       | LIOC | <i>Linderiella occidentalis</i> | PF | ponded feature   | T    | trash                     | VP | vernal pool  |



ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition |                           |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|-------------------|---------------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                   | Diptera Chironomidae      |
| SW-46                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-46        | 4258852        | 658282        | 0           | 0          | 0            | 0             | 0                    | 25        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-D: TT; G: C- MG |
| SW-47                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Partly Cloudy      | SW-47        | 4258746        | 658420        | 16.0        | 16.0       | 7.6          | 12.7          | 3.0                  | 11        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| SW-47                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | SW-47        | 4258746        | 658420        | 14.0        | 11.4       | 5.0          | 9.0           | 2.0                  | 11        |             |              |          |           |           |            |           |                   |                            | x                 | Grassland-G: C- LG        |
| SW-47                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | SW-47        | 4258746        | 658420        | 0           | 0          | 0            | 0             | 0                    | 11        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| SW-47                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy             | SW-47        | 4258746        | 658420        | 0           | 0          | 0            | 0             | 0                    | 11        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| SW-47                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear              | SW-47        | 4258746        | 658420        | 0           | 0          | 0            | 0             | 0                    | 11        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| SW-47                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-47        | 4258746        | 658420        | 0           | 0          | 0            | 0             | 0                    | 11        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| SW-47                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-47        | 4258746        | 658420        | 0           | 0          | 0            | 0             | 0                    | 11        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| SW-48                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Cloudy             | SW-48        | 4258737        | 658433        | 15.0        | 19.0       | 5.1          | 10.2          | 1.0                  | 46        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| SW-48                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | SW-48        | 4258737        | 658433        | 14.0        | 8.9        | 3.0          | 3.0           | 1.0                  | 46        |             |              |          | x         |           |            |           |                   |                            | x                 | Grassland-G: C- LG        |
| SW-48                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | SW-48        | 4258737        | 658433        | 0           | 0          | 0            | 0             | 0                    | 46        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| SW-48                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy             | SW-48        | 4258737        | 658433        | 0           | 0          | 0            | 0             | 0                    | 46        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| SW-48                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear              | SW-48        | 4258737        | 658433        | 0           | 0          | 0            | 0             | 0                    | 46        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| SW-48                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-48        | 4258737        | 658433        | 0           | 0          | 0            | 0             | 0                    | 46        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| SW-48                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-48        | 4258737        | 658433        | 0           | 0          | 0            | 0             | 0                    | 46        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |

|      |                             |     |                             |      |                                 |    |                  |      |                           |    |              |
|------|-----------------------------|-----|-----------------------------|------|---------------------------------|----|------------------|------|---------------------------|----|--------------|
| C    | cattle                      | ED  | ephemeral drainage          | HG   | heavy grazing                   | MG | moderate grazing | PSRE | <i>Pseudacris regilla</i> | TT | tire tracks  |
| CYCA | <i>Cyzicus californicus</i> | FEW | freshwater emergent wetland | ID   | intermittent drainage           | P  | pond             | SW   | seasonal wetland          | UG | ungrazed     |
| D    | ditch                       | G   | grazed                      | LG   | light grazing                   | P  | plowed           | SWS  | seasonal wetland swale    | US | upland swale |
| D    | disturbed                   | H   | horse                       | LIOC | <i>Linderiella occidentalis</i> | PF | ponded feature   | T    | trash                     | VP | vernal pool  |

ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition |                      |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|-------------------|----------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                   | Diptera Chironomidae |
| SW-49                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Cloudy             | SW-49        | 4258752        | 658455        | 0           | 0          | 0.0          | 0.0           | 0                    | 22        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SW-49                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | SW-49        | 4258752        | 658455        | 0           | 0          | 0.0          | 0.0           | 0                    | 22        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SW-49                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | SW-49        | 4258752        | 658455        | 0           | 0          | 0            | 0             | 0                    | 22        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SW-49                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy             | SW-49        | 4258752        | 658455        | 0           | 0          | 0            | 0             | 0                    | 22        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SW-49                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear              | SW-49        | 4258752        | 658455        | 0           | 0          | 0            | 0             | 0                    | 22        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SW-49                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-49        | 4258752        | 658455        | 0           | 0          | 0            | 0             | 0                    | 22        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SW-49                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-49        | 4258752        | 658455        | 0           | 0          | 0            | 0             | 0                    | 22        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SW-50                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Partly Cloudy      | SW-50        | 4258719        | 658474        | 16.0        | 18.0       | 10.2         | 15.2          | 3.0                  | 149       |             |              | x        |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SW-50                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | SW-50        | 4258719        | 658474        | 16.6        | 10.5       | 4.0          | 13.0          | 2.0                  | 149       |             |              |          |           | x         | x          |           |                   |                            | x                 | Grassland-G: C- LG   |
| SW-50                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | SW-50        | 4258719        | 658474        | 0           | 0          | 0            | 0             | 0                    | 149       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SW-50                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy             | SW-50        | 4258719        | 658474        | 0           | 0          | 0            | 0             | 0                    | 149       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SW-50                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy             | SW-50        | 4258719        | 658474        | 0           | 0          | 0            | 0             | 0                    | 149       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SW-50                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear              | SW-50        | 4258719        | 658474        | 0           | 0          | 0            | 0             | 0                    | 149       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SW-50                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-50        | 4258719        | 658474        | 0           | 0          | 0            | 0             | 0                    | 149       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SW-51                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Partly Cloudy      | SW-51        | 4258740        | 658601        | 15.0        | 16.0       | 10.2         | 17.8          | 5.0                  | 153       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |

C cattle  
 CYCA *Cyzicus californicus*  
 D ditch  
 D disturbed

ED ephemeral drainage  
 FEW freshwater emergent wetland  
 G grazed  
 H horse

HG heavy grazing  
 ID intermittent drainage  
 LG light grazing  
 LIOC *Linderiella occidentalis*

MG moderate grazing  
 P pond  
 P plowed  
 PF ponded feature

PSRE *Pseudacris regilla*  
 SW seasonal wetland  
 SWS seasonal wetland swale  
 T trash

TT tire tracks  
 UG ungrazed  
 US upland swale  
 VP vernal pool

ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   |                      | Platyhelminths (flatworms) | Habitat Condition |                    |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------|----------------------------|-------------------|--------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae | Diptera Chironomidae |                            |                   |                    |
| SW-51                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | SW-51        | 4258740        | 658601        | 16.4        | 10.6       | 4.0          | 7.0           | 3.0                  | 153       |             |              |          | x         |           |            |           |                   |                      |                            | x                 | Grassland-G: C- HG |
| SW-51                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | SW-51        | 4258740        | 658601        | 0           | 0          | 0            | 0             | 0                    | 153       |             |              |          |           |           |            |           |                   |                      |                            |                   | Grassland-G: C- HG |
| SW-51                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy             | SW-51        | 4258740        | 658601        | 0           | 0          | 0            | 0             | 0                    | 153       |             |              |          |           |           |            |           |                   |                      |                            |                   | Grassland-G: C- HG |
| SW-51                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear              | SW-51        | 4258740        | 658601        | 0           | 0          | 0            | 0             | 0                    | 153       |             |              |          |           |           |            |           |                   |                      |                            |                   | Grassland-G: C- HG |
| SW-51                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SW-51        | 4258740        | 658601        | 0           | 0          | 0            | 0             | 0                    | 153       |             |              |          |           |           |            |           |                   |                      |                            |                   | Grassland-G: C- HG |
| SW-51                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SW-51        | 4258740        | 658601        | 0           | 0          | 0            | 0             | 0                    | 153       |             |              |          |           |           |            |           |                   |                      |                            |                   | Grassland-G: C- HG |
| SWS-01                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Cloudy             | SWS-01       | 4260082        | 659207        | 0           | 0          | 0.0          | 0.0           | 0                    | 5         |             |              |          |           |           |            |           |                   |                      |                            |                   | Grassland-G: C- MG |
| SWS-01                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | SWS-01       | 4260082        | 659207        | 0           | 0          | 0            | 0             | 0                    | 5         |             |              |          |           |           |            |           |                   |                      |                            |                   | Grassland-G: C- MG |
| SWS-01                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | SWS-01       | 4260082        | 659207        | 0           | 0          | 0            | 0             | 0                    | 5         |             |              |          |           |           |            |           |                   |                      |                            |                   | Grassland-G: C- MG |
| SWS-01                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SWS-01       | 4260082        | 659207        | 0           | 0          | 0            | 0             | 0                    | 5         |             |              |          |           |           |            |           |                   |                      |                            |                   | Grassland-G: C- MG |
| SWS-01                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SWS-01       | 4260082        | 659207        | 0           | 0          | 0            | 0             | 0                    | 5         |             |              |          |           |           |            |           |                   |                      |                            |                   | Grassland-G: C- MG |
| SWS-01                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SWS-01       | 4260082        | 659207        | 0           | 0          | 0            | 0             | 0                    | 5         |             |              |          |           |           |            |           |                   |                      |                            |                   | Grassland-G: C- MG |
| SWS-01                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SWS-01       | 4260082        | 659207        | 0           | 0          | 0            | 0             | 0                    | 5         |             |              |          |           |           |            |           |                   |                      |                            |                   | Grassland-G: C- MG |
| SWS-02                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear              | SWS-02       | 4260557        | 657874        | 0           | 0          | 0.0          | 0.0           | 0                    | 789       |             |              |          |           |           |            |           |                   |                      |                            |                   | Grassland-G: C- MG |
| SWS-02                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | SWS-02       | 4260557        | 657874        | 0           | 0          | 0            | 0             | 0                    | 789       |             |              |          |           |           |            |           |                   |                      |                            |                   | Grassland-G: C- MG |

C cattle  
 CYCA *Cyzicus californicus*  
 D ditch  
 D disturbed

ED ephemeral drainage  
 FEW freshwater emergent wetland  
 G grazed  
 H horse

HG heavy grazing  
 ID intermittent drainage  
 LG light grazing  
 LIOC *Linderiella occidentalis*

MG moderate grazing  
 P pond  
 P plowed  
 PF ponded feature

PSRE *Pseudocris regilla*  
 SW seasonal wetland  
 SWS seasonal wetland swale  
 T trash

TT tire tracks  
 UG ungrazed  
 US upland swale  
 VP vernal pool



ATTACHMENT H  
USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                      |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   |                      | Platyhelminths (flatworms) | Habitat Condition  |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|----------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------|----------------------------|--------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions   | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae | Diptera Chironomidae |                            |                    |
| SWS-02                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear                | SWS-02       | 4260557        | 657874        | 0           | 0          | 0            | 0             | 0                    | 789       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SWS-02                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy               | SWS-02       | 4260557        | 657874        | 0           | 0          | 0            | 0             | 0                    | 789       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SWS-02                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear                | SWS-02       | 4260557        | 657874        | 0           | 0          | 0            | 0             | 0                    | 789       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SWS-02                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear                | SWS-02       | 4260557        | 657874        | 0           | 0          | 0            | 0             | 0                    | 789       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SWS-02                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear                | SWS-02       | 4260557        | 657874        | 0           | 0          | 0            | 0             | 0                    | 789       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SWS-03                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear                | SWS-03       | 4260796        | 657938        | 0           | 0          | 0.0          | 0.0           | 0                    | 39        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SWS-03                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy        | SWS-03       | 4260796        | 657938        | 0           | 0          | 0.0          | 0.0           | 0                    | 39        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SWS-03                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy               | SWS-03       | 4260796        | 657938        | 0           | 0          | 0            | 0             | 0                    | 39        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SWS-03                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy               | SWS-03       | 4260796        | 657938        | 0           | 0          | 0            | 0             | 0                    | 39        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SWS-03                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear                | SWS-03       | 4260796        | 657938        | 0           | 0          | 0            | 0             | 0                    | 39        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SWS-03                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear                | SWS-03       | 4260796        | 657938        | 0           | 0          | 0            | 0             | 0                    | 39        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SWS-03                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear                | SWS-03       | 4260796        | 657938        | 0           | 0          | 0            | 0             | 0                    | 39        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SWS-04                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear                | SWS-04       | 4259690        | 658014        | 12.1        | 10.4       | 11.2         | 40.6          | 99.0                 | 4,524     |             |              | x        |           |           | x          |           |                   |                      |                            | Grassland-G: C- MG |
| SWS-04                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 2/19/2021 | 0800-1700 | Precipitation - Full | SWS-04       | 4259690        | 658014        | 11.7        | 11.3       | 13.0         | 36.0          | 230.0                | 4,524     |             |              |          |           |           | x          |           |                   |                      | x                          | Grassland-G: C- MG |
| SWS-04                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear                | SWS-04       | 4259690        | 658014        | 18.2        | 20.5       | 8.5          | 30.0          | 36.0                 | 4,524     |             |              | x        | x         | x         | x          |           |                   | x                    | x                          | Grassland-G: C- MG |

C cattle  
CYCA *Cyzicus californicus*  
D ditch  
D disturbed

ED ephemeral drainage  
FEW freshwater emergent wetland  
G grazed  
H horse

HG heavy grazing  
ID intermittent drainage  
LG light grazing  
LIOC *Linderiella occidentalis*

MG moderate grazing  
P pond  
P plowed  
PF ponded feature

PSRE *Pseudacris regilla*  
SW seasonal wetland  
SWS seasonal wetland swale  
T trash

TT tire tracks  
UG ungrazed  
US upland swale  
VP vernal pool

ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                      |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition |                           |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|----------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|-------------------|---------------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions   | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                   | Diptera Chironomidae      |
| SWS-04                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy               | SWS-04       | 4259690        | 658014        | 16.7        | 15.2       | 9.0          | 15.0          | 2.0                  | 4,524     |             |              |          | x         | x         | x          |           |                   |                            |                   | Grassland-G: C- MG        |
| SWS-04                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear                | SWS-04       | 4259690        | 658014        | 26.4        | 27.0       | 8.0          | 10.0          | 1.0                  | 4,524     |             |              |          | x         | x         | x          |           |                   |                            |                   | Grassland-G: C- MG        |
| SWS-04                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear                | SWS-04       | 4259690        | 658014        | 0           | 0          | 0            | 0             | 0                    | 4,524     |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG        |
| SWS-04                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear                | SWS-04       | 4259690        | 658014        | 0           | 0          | 0            | 0             | 0                    | 4,524     |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG        |
| SWS-05                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear                | SWS-05       | 4259360        | 657720        | 11.0        | 13.0       | 5.1          | 22.9          | 20.0                 | 1,076     |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG        |
| SWS-05                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 2/19/2021 | 0800-1700 | Cloudy               | SWS-05       | 4259360        | 657720        | 13.3        | 12.1       | 10.0         | 19.0          | 10.0                 | 1,076     |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG        |
| SWS-05                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear                | SWS-05       | 4259360        | 657720        | 18.0        | 22.2       | 2.0          | 3.0           | 1.0                  | 1,076     |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG        |
| SWS-05                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy               | SWS-05       | 4259360        | 657720        | 17.1        | 16.6       | 4.0          | 6.0           | 2.0                  | 1,076     |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG        |
| SWS-05                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear                | SWS-05       | 4259360        | 657720        | 0           | 0          | 0            | 0             | 0                    | 1,076     |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG        |
| SWS-05                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear                | SWS-05       | 4259360        | 657720        | 0           | 0          | 0            | 0             | 0                    | 1,076     |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG        |
| SWS-05                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/29/2021 | 0800-1700 | Clear                | SWS-05       | 4259360        | 657720        | 0           | 0          | 0            | 0             | 0                    | 1,076     |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG        |
| SWS-06                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear                | SWS-06       | 4258877        | 658233        | 12.0        | 11.0       | 2.5          | 5.1           | 10.0                 | 135       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-D: TT; G: C- MG |
| SWS-06                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/19/2021 | 0800-1700 | Precipitation - Full | SWS-06       | 4258877        | 658233        | 12.0        | 11.0       | 5.0          | 10.0          | 100.0                | 135       |             |              |          | x         |           | x          |           |                   |                            | x                 | Grassland-D: TT; G: C- MG |
| SWS-06                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear                | SWS-06       | 4258877        | 658233        | 0           | 0          | 0            | 0             | 0                    | 135       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-D: TT; G: C- MG |

|      |                             |     |                             |      |                                 |    |                  |      |                           |    |              |
|------|-----------------------------|-----|-----------------------------|------|---------------------------------|----|------------------|------|---------------------------|----|--------------|
| C    | cattle                      | ED  | ephemeral drainage          | HG   | heavy grazing                   | MG | moderate grazing | PSRE | <i>Pseudacris regilla</i> | TT | tire tracks  |
| CYCA | <i>Cyzicus californicus</i> | FEW | freshwater emergent wetland | ID   | intermittent drainage           | P  | pond             | SW   | seasonal wetland          | UG | ungrazed     |
| D    | ditch                       | G   | grazed                      | LG   | light grazing                   | P  | plowed           | SWS  | seasonal wetland swale    | US | upland swale |
| D    | disturbed                   | H   | horse                       | LIOC | <i>Linderiella occidentalis</i> | PF | ponded feature   | T    | trash                     | VP | vernal pool  |

ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   |                      | Platyhelminths (flatworms) | Habitat Condition         |                    |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------|----------------------------|---------------------------|--------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae | Diptera Chironomidae |                            |                           |                    |
| SWS-06                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy             | SWS-06       | 4258877        | 658233        | 12.9        | 12.2       | 5.0          | 10.0          | 1.0                  | 135       |             |              |          | x         | x         | x          |           |                   |                      |                            | Grassland-D: TT; G: C- MG |                    |
| SWS-06                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear              | SWS-06       | 4258877        | 658233        | 0           | 0          | 0            | 0             | 0                    | 135       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-D: TT; G: C- MG |                    |
| SWS-06                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SWS-06       | 4258877        | 658233        | 0           | 0          | 0            | 0             | 0                    | 135       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-D: TT; G: C- MG |                    |
| SWS-06                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SWS-06       | 4258877        | 658233        | 0           | 0          | 0            | 0             | 0                    | 135       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-D: TT; G: C- MG |                    |
| SWS-07                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Partly Cloudy      | SWS-07       | 4258688        | 658542        | 17.0        | 14.0       | 10.2         | 17.8          | 12.0                 | 359       |             |              | x        | x         | x         | x          | x         | x                 | x                    | x                          | Yes                       | Grassland-G: C- HG |
| SWS-07                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | SWS-07       | 4258688        | 658542        | 16.4        | 10.2       | 10.0         | 18.0          | 8.0                  | 359       |             |              |          |           |           |            | x         |                   |                      |                            | x                         | Grassland-G: C- HG |
| SWS-07                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | SWS-07       | 4258688        | 658542        | 0           | 0          | 0            | 0             | 0                    | 359       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG        |                    |
| SWS-07                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy             | SWS-07       | 4258688        | 658542        | 0           | 0          | 0            | 0             | 0                    | 359       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG        |                    |
| SWS-07                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear              | SWS-07       | 4258688        | 658542        | 0           | 0          | 0            | 0             | 0                    | 359       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG        |                    |
| SWS-07                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SWS-07       | 4258688        | 658542        | 0           | 0          | 0            | 0             | 0                    | 359       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG        |                    |
| SWS-07                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SWS-07       | 4258688        | 658542        | 0           | 0          | 0            | 0             | 0                    | 359       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG        |                    |
| SWS-08                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Partly Cloudy      | SWS-08       | 4258740        | 658578        | 0           | 0          | 0.0          | 0.0           | 0                    | 107       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG        |                    |
| SWS-08                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | SWS-08       | 4258740        | 658578        | 0           | 0          | 0            | 0             | 0                    | 107       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG        |                    |
| SWS-08                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | SWS-08       | 4258740        | 658578        | 0           | 0          | 0            | 0             | 0                    | 107       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG        |                    |

|      |                             |     |                             |      |                                 |    |                  |      |                           |    |              |
|------|-----------------------------|-----|-----------------------------|------|---------------------------------|----|------------------|------|---------------------------|----|--------------|
| C    | cattle                      | ED  | ephemeral drainage          | HG   | heavy grazing                   | MG | moderate grazing | PSRE | <i>Pseudacris regilla</i> | TT | tire tracks  |
| CYCA | <i>Cyzicus californicus</i> | FEW | freshwater emergent wetland | ID   | intermittent drainage           | P  | pond             | SW   | seasonal wetland          | UG | ungrazed     |
| D    | ditch                       | G   | grazed                      | LG   | light grazing                   | P  | plowed           | SWS  | seasonal wetland swale    | US | upland swale |
| D    | disturbed                   | H   | horse                       | LIOC | <i>Linderiella occidentalis</i> | PF | ponded feature   | T    | trash                     | VP | vernal pool  |



ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                      |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   |                      | Platyhelminths (flatworms) | Habitat Condition  |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|----------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------|----------------------------|--------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions   | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae | Diptera Chironomidae |                            |                    |
| SWS-08                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy               | SWS-08       | 4258740        | 658578        | 0           | 0          | 0            | 0             | 0                    | 107       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SWS-08                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear                | SWS-08       | 4258740        | 658578        | 0           | 0          | 0            | 0             | 0                    | 107       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SWS-08                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear                | SWS-08       | 4258740        | 658578        | 0           | 0          | 0            | 0             | 0                    | 107       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SWS-08                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear                | SWS-08       | 4258740        | 658578        | 0           | 0          | 0            | 0             | 0                    | 107       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SWS-09                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Precipitation - Full | SWS-09       | 4260491        | 658605        | 11.0        | 12.0       | 12.7         | 17.8          | 70.0                 | 185       |             |              |          |           |           | x          |           |                   |                      |                            | Grassland-G: C- MG |
| SWS-09                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear                | SWS-09       | 4260491        | 658605        | 16.4        | 18.3       | 5.0          | 10.0          | 5.0                  | 185       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SWS-09                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy               | SWS-09       | 4260491        | 658605        | 0           | 0          | 0            | 0             | 0                    | 185       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SWS-09                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy               | SWS-09       | 4260491        | 658605        | 0           | 0          | 0            | 0             | 0                    | 185       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SWS-09                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear                | SWS-09       | 4260491        | 658605        | 0           | 0          | 0            | 0             | 0                    | 185       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SWS-09                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear                | SWS-09       | 4260491        | 658605        | 0           | 0          | 0            | 0             | 0                    | 185       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SWS-09                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear                | SWS-09       | 4260491        | 658605        | 0           | 0          | 0            | 0             | 0                    | 185       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SWS-10                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear                | SWS-10       | 4259848        | 658222        | 10.0        | 8.0        | 15.2         | 25.4          | 10.0                 | 13        |             |              |          |           |           | x          |           |                   |                      |                            | Grassland-G: C- HG |
| SWS-10                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/19/2021 | 0800-1700 | Precipitation - Full | SWS-10       | 4259848        | 658222        | 12.0        | 13.0       | 20.0         | 32.0          | 10.0                 | 13        |             |              |          |           |           | x          |           | x                 | x                    |                            | Grassland-G: C- HG |
| SWS-10                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear                | SWS-10       | 4259848        | 658222        | 14.9        | 18.1       | 6.0          | 15.0          | 5.0                  | 13        |             |              | x        | x         | x         |            |           |                   |                      |                            | Grassland-G: C- HG |
| SWS-10                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy               | SWS-10       | 4259848        | 658222        | 0           | 0          | 0            | 0             | 0                    | 13        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |

C cattle  
 CYCA *Cyzicus californicus*  
 D ditch  
 D disturbed

ED ephemeral drainage  
 FEW freshwater emergent wetland  
 G grazed  
 H horse

HG heavy grazing  
 ID intermittent drainage  
 LG light grazing  
 LIOC *Linderiella occidentalis*

MG moderate grazing  
 P pond  
 P plowed  
 PF ponded feature

PSRE *Pseudacris regilla*  
 SW seasonal wetland  
 SWS seasonal wetland swale  
 T trash

TT tire tracks  
 UG ungrazed  
 US upland swale  
 VP vernal pool

ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                      |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition |                      |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|----------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|-------------------|----------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions   | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                   | Diptera Chironomidae |
| SWS-10                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear                | SWS-10       | 4259848        | 658222        | 0           | 0          | 0            | 0             | 0                    | 13        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| SWS-10                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear                | SWS-10       | 4259848        | 658222        | 29.9        | 0          | 20.0         | 25.0          | 12.0                 | 13        |             |              |          |           | x         | x          | x         |                   |                            |                   | Grassland-G: C- HG   |
| SWS-11                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear                | SWS-11       | 4259841        | 658177        | 10.9        | 9.6        | 2.5          | 10.2          | 2.0                  | 68        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SWS-11                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/19/2021 | 0800-1700 | Cloudy               | SWS-11       | 4259841        | 658177        | 0           | 0          | 0            | 0             | 0                    | 68        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SWS-11                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear                | SWS-11       | 4259841        | 658177        | 0           | 0          | 0            | 0             | 0                    | 68        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SWS-11                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy               | SWS-11       | 4259841        | 658177        | 0           | 0          | 0            | 0             | 0                    | 68        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SWS-11                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear                | SWS-11       | 4259841        | 658177        | 0           | 0          | 0            | 0             | 0                    | 68        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SWS-11                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear                | SWS-11       | 4259841        | 658177        | 0           | 0          | 0            | 0             | 0                    | 68        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SWS-11                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear                | SWS-11       | 4259841        | 658177        | 0           | 0          | 0            | 0             | 0                    | 68        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| SWS-12                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear                | SWS-12       | 4259860        | 658189        | 10.0        | 8.0        | 7.6          | 25.4          | 10.0                 | 86        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| SWS-12                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/19/2021 | 0800-1700 | Precipitation - Full | SWS-12       | 4259860        | 658189        | 0           | 0          | 10.0         | 31.0          | 20.0                 | 86        |             |              |          |           | x         | x          |           |                   |                            | x                 | Grassland-G: C- HG   |
| SWS-12                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear                | SWS-12       | 4259860        | 658189        | 18.1        | 20.6       | 6.0          | 15.0          | 3.0                  | 86        |             |              |          |           | x         |            |           |                   |                            |                   | Grassland-G: C- HG   |
| SWS-12                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy               | SWS-12       | 4259860        | 658189        | 0           | 0          | 0            | 0             | 0                    | 86        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| SWS-12                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear                | SWS-12       | 4259860        | 658189        | 0           | 0          | 0            | 0             | 0                    | 86        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| SWS-12                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear                | SWS-12       | 4259860        | 658189        | 0           | 0          | 0            | 0             | 0                    | 86        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |

C cattle  
 CYCA *Cyzicus californicus*  
 D ditch  
 D disturbed

ED ephemeral drainage  
 FEW freshwater emergent wetland  
 G grazed  
 H horse

HG heavy grazing  
 ID intermittent drainage  
 LG light grazing  
 LIOC *Linderiella occidentalis*

MG moderate grazing  
 P pond  
 P plowed  
 PF ponded feature

PSRE *Pseudocris regilla*  
 SW seasonal wetland  
 SWS seasonal wetland swale  
 T trash

TT tire tracks  
 UG ungrazed  
 US upland swale  
 VP vernal pool

ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   |                      | Platyhelminths (flatworms) | Habitat Condition  |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------|----------------------------|--------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae | Diptera Chironomidae |                            |                    |
| SWS-12                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SWS-12       | 4259860        | 658189        | 29.9        | 26.5       | 10.0         | 14.0          | 3.0                  | 86        |             |              |          |           |           | x          | x         |                   |                      |                            | Grassland-G: C- HG |
| SWS-13                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear              | SWS-13       | 4260634        | 658637        | 18.0        | 19.0       | 5.1          | 12.7          | 1.0                  | 487       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SWS-13                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | SWS-13       | 4260634        | 658637        | 0           | 0          | 0            | 0             | 0                    | 487       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SWS-13                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | SWS-13       | 4260634        | 658637        | 0           | 0          | 0            | 0             | 0                    | 487       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SWS-13                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SWS-13       | 4260634        | 658637        | 0           | 0          | 0            | 0             | 0                    | 487       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SWS-13                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SWS-13       | 4260634        | 658637        | 0           | 0          | 0            | 0             | 0                    | 487       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SWS-13                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SWS-13       | 4260634        | 658637        | 0           | 0          | 0            | 0             | 0                    | 487       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SWS-13                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SWS-13       | 4260634        | 658637        | 0           | 0          | 0            | 0             | 0                    | 487       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| SWS-14                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear              | SWS-14       | 4260687        | 658459        | 18.0        | 16.0       | 5.1          | 7.6           | 1.0                  | 108       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SWS-14                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | SWS-14       | 4260687        | 658459        | 0           | 0          | 0            | 0             | 0                    | 108       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SWS-14                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | SWS-14       | 4260687        | 658459        | 0           | 0          | 0            | 0             | 0                    | 108       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SWS-14                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SWS-14       | 4260687        | 658459        | 0           | 0          | 0            | 0             | 0                    | 108       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SWS-14                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SWS-14       | 4260687        | 658459        | 0           | 0          | 0            | 0             | 0                    | 108       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SWS-14                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SWS-14       | 4260687        | 658459        | 0           | 0          | 0            | 0             | 0                    | 108       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SWS-14                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SWS-14       | 4260687        | 658459        | 0           | 0          | 0            | 0             | 0                    | 108       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |

|      |                             |     |                             |      |                                 |    |                  |      |                           |    |              |
|------|-----------------------------|-----|-----------------------------|------|---------------------------------|----|------------------|------|---------------------------|----|--------------|
| C    | cattle                      | ED  | ephemeral drainage          | HG   | heavy grazing                   | MG | moderate grazing | PSRE | <i>Pseudacris regilla</i> | TT | tire tracks  |
| CYCA | <i>Cyzicus californicus</i> | FEW | freshwater emergent wetland | ID   | intermittent drainage           | P  | pond             | SW   | seasonal wetland          | UG | ungrazed     |
| D    | ditch                       | G   | grazed                      | LG   | light grazing                   | P  | plowed           | SWS  | seasonal wetland swale    | US | upland swale |
| D    | disturbed                   | H   | horse                       | LIOC | <i>Linderiella occidentalis</i> | PF | ponded feature   | T    | trash                     | VP | vernal pool  |



ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   |                      | Platyhelminths (flatworms) | Habitat Condition  |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------|----------------------------|--------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae | Diptera Chironomidae |                            |                    |
| SWS-15                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear              | SWS-15       | 4260507        | 658344        | 0           | 0          | 0.0          | 0.0           | 0                    | 1,169     |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SWS-15                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | SWS-15       | 4260507        | 658344        | 0           | 0          | 0            | 0             | 0                    | 1,169     |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SWS-15                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | SWS-15       | 4260507        | 658344        | 0           | 0          | 0            | 0             | 0                    | 1,169     |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SWS-15                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | SWS-15       | 4260507        | 658344        | 0           | 0          | 0            | 0             | 0                    | 1,169     |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SWS-15                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | SWS-15       | 4260507        | 658344        | 0           | 0          | 0            | 0             | 0                    | 1,169     |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SWS-15                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | SWS-15       | 4260507        | 658344        | 0           | 0          | 0            | 0             | 0                    | 1,169     |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| SWS-15                                                           | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | SWS-15       | 4260507        | 658344        | 0           | 0          | 0            | 0             | 0                    | 1,169     |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| US-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 3        | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear              | US-01        | 4261210        | 657639        | 0           | 0          | 0.0          | 0.0           | 0                    | 1,993     |             |              |          |           |           |            |           |                   |                      |                            | Grassland-UG       |
| US-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 3        | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | US-01        | 4261210        | 657639        | 0           | 0          | 0            | 0             | 0                    | 1,993     |             |              |          |           |           |            |           |                   |                      |                            | Grassland-UG       |
| US-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 3        | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | US-01        | 4261210        | 657639        | 0           | 0          | 0            | 0             | 0                    | 1,993     |             |              |          |           |           |            |           |                   |                      |                            | Grassland-UG       |
| US-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 3        | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | US-01        | 4261210        | 657639        | 0           | 0          | 0            | 0             | 0                    | 1,993     |             |              |          |           |           |            |           |                   |                      |                            | Grassland-UG       |
| US-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 3        | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | US-01        | 4261210        | 657639        | 0           | 0          | 0            | 0             | 0                    | 1,993     |             |              |          |           |           |            |           |                   |                      |                            | Grassland-D: P; UG |
| US-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 3        | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | US-01        | 4261210        | 657639        | 0           | 0          | 0            | 0             | 0                    | 1,993     |             |              |          |           |           |            |           |                   |                      |                            | Grassland-D: P; UG |
| US-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 3        | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | US-01        | 4261210        | 657639        | 0           | 0          | 0            | 0             | 0                    | 1,993     |             |              |          |           |           |            |           |                   |                      |                            | Grassland-D: P; UG |
| US-02                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy             | US-02        | 4259312        | 658494        | 0           | 0          | 0            | 0             | 0                    | 69        |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |

|      |                             |     |                             |      |                                 |    |                  |      |                           |    |              |
|------|-----------------------------|-----|-----------------------------|------|---------------------------------|----|------------------|------|---------------------------|----|--------------|
| C    | cattle                      | ED  | ephemeral drainage          | HG   | heavy grazing                   | MG | moderate grazing | PSRE | <i>Pseudacris regilla</i> | TT | tire tracks  |
| CYCA | <i>Cyzicus californicus</i> | FEW | freshwater emergent wetland | ID   | intermittent drainage           | P  | pond             | SW   | seasonal wetland          | UG | ungrazed     |
| D    | ditch                       | G   | grazed                      | LG   | light grazing                   | P  | plowed           | SWS  | seasonal wetland swale    | US | upland swale |
| D    | disturbed                   | H   | horse                       | LIOC | <i>Linderiella occidentalis</i> | PF | ponded feature   | T    | trash                     | VP | vernal pool  |

ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition |                      |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|-------------------|----------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                   | Diptera Chironomidae |
| US-02                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear              | US-02        | 4259312        | 658494        | 0           | 0          | 0            | 0             | 0                    | 69        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| US-02                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | US-02        | 4259312        | 658494        | 0           | 0          | 0            | 0             | 0                    | 69        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| US-02                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | US-02        | 4259312        | 658494        | 0           | 0          | 0            | 0             | 0                    | 69        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| US-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Partly Cloudy      | US-03        | 4259031        | 658679        | 17.0        | 12.0       | 5.1          | 10.2          | 3.0                  | 49        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| US-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | US-03        | 4259031        | 658679        | 14.6        | 8.6        | 7.0          | 14.0          | 3.0                  | 49        | LIOC        |              |          | x         | x         | x          |           |                   |                            | x                 | Grassland-G: C- LG   |
| US-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | US-03        | 4259031        | 658679        | 0           | 0          | 0            | 0             | 0                    | 49        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| US-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy             | US-03        | 4259031        | 658679        | 0           | 0          | 0            | 0             | 0                    | 49        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| US-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear              | US-03        | 4259031        | 658679        | 0           | 0          | 0            | 0             | 0                    | 49        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| US-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | US-03        | 4259031        | 658679        | 0           | 0          | 0            | 0             | 0                    | 49        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| US-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | US-03        | 4259031        | 658679        | 0           | 0          | 0            | 0             | 0                    | 49        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| US-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Partly Cloudy      | US-04        | 4258751        | 658508        | 16.0        | 15.0       | 7.6          | 12.7          | 1.0                  | 69        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| US-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | US-04        | 4258751        | 658508        | 0           | 0          | 0            | 0             | 0                    | 69        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| US-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | US-04        | 4258751        | 658508        | 0           | 0          | 0            | 0             | 0                    | 69        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| US-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy             | US-04        | 4258751        | 658508        | 0           | 0          | 0            | 0             | 0                    | 69        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| US-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear              | US-04        | 4258751        | 658508        | 0           | 0          | 0            | 0             | 0                    | 69        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |

|      |                             |     |                             |      |                                 |    |                  |      |                           |    |              |
|------|-----------------------------|-----|-----------------------------|------|---------------------------------|----|------------------|------|---------------------------|----|--------------|
| C    | cattle                      | ED  | ephemeral drainage          | HG   | heavy grazing                   | MG | moderate grazing | PSRE | <i>Pseudacris regilla</i> | TT | tire tracks  |
| CYCA | <i>Cyzicus californicus</i> | FEW | freshwater emergent wetland | ID   | intermittent drainage           | P  | pond             | SW   | seasonal wetland          | UG | ungrazed     |
| D    | ditch                       | G   | grazed                      | LG   | light grazing                   | P  | plowed           | SWS  | seasonal wetland swale    | US | upland swale |
| D    | disturbed                   | H   | horse                       | LIOC | <i>Linderiella occidentalis</i> | PF | ponded feature   | T    | trash                     | VP | vernal pool  |

ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition |                      |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|-------------------|----------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                   | Diptera Chironomidae |
| US-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | US-04        | 4258751        | 658508        | 0           | 0          | 0            | 0             | 0                    | 69        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| US-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | US-04        | 4258751        | 658508        | 0           | 0          | 0            | 0             | 0                    | 69        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| US-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Partly Cloudy      | US-05        | 4258790        | 658555        | 0           | 0          | 0            | 0             | 0                    | 91        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| US-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | US-05        | 4258790        | 658555        | 16.5        | 12.4       | 2.0          | 5.0           | 1.0                  | 91        |             |              |          | x         | x         |            |           |                   |                            | x                 | Grassland-G: C- HG   |
| US-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | US-05        | 4258790        | 658555        | 0           | 0          | 0            | 0             | 0                    | 91        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| US-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy             | US-05        | 4258790        | 658555        | 0           | 0          | 0            | 0             | 0                    | 91        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| US-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear              | US-05        | 4258790        | 658555        | 0           | 0          | 0            | 0             | 0                    | 91        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| US-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | US-05        | 4258790        | 658555        | 0           | 0          | 0            | 0             | 0                    | 91        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| US-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | US-05        | 4258790        | 658555        | 0           | 0          | 0            | 0             | 0                    | 91        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| US-06                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 2        | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear              | US-06        | 4260865        | 658239        | 0           | 0          | 0.0          | 0.0           | 0                    | 38        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| US-06                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 2        | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | US-06        | 4260865        | 658239        | 0           | 0          | 0            | 0             | 0                    | 38        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| US-06                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 2        | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | US-06        | 4260865        | 658239        | 0           | 0          | 0            | 0             | 0                    | 38        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| US-06                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 2        | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | US-06        | 4260865        | 658239        | 0           | 0          | 0            | 0             | 0                    | 38        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| US-06                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 2        | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear              | US-06        | 4260865        | 658239        | 0           | 0          | 0            | 0             | 0                    | 38        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| US-06                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 2        | Heather Moine/TE-60147A-1 | 4/15/2021 | 0800-1700 | Clear              | US-06        | 4260865        | 658239        | 0           | 0          | 0            | 0             | 0                    | 38        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |

|      |                             |     |                             |      |                                 |    |                  |      |                           |    |              |
|------|-----------------------------|-----|-----------------------------|------|---------------------------------|----|------------------|------|---------------------------|----|--------------|
| C    | cattle                      | ED  | ephemeral drainage          | HG   | heavy grazing                   | MG | moderate grazing | PSRE | <i>Pseudocris regilla</i> | TT | tire tracks  |
| CYCA | <i>Cyzicus californicus</i> | FEW | freshwater emergent wetland | ID   | intermittent drainage           | P  | pond             | SW   | seasonal wetland          | UG | ungrazed     |
| D    | ditch                       | G   | grazed                      | LG   | light grazing                   | P  | plowed           | SWS  | seasonal wetland swale    | US | upland swale |
| D    | disturbed                   | H   | horse                       | LIOC | <i>Linderiella occidentalis</i> | PF | ponded feature   | T    | trash                     | VP | vernal pool  |



ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                      |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition |                      |                    |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|----------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|-------------------|----------------------|--------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions   | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                   | Diptera Chironomidae |                    |
| US-06                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 2        | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear                | US-06        | 4260865        | 658239        | 0           | 0          | 0            | 0             | 0                    | 38        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |                    |
| US-07                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear                | US-07        | 4259264        | 658240        | 0           | 0          | 0.0          | 0.0           | 0                    | 154       |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- MG |
| US-07                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/19/2021 | 0800-1700 | Precipitation - Full | US-07        | 4259264        | 658240        | 0           | 0          | 0            | 0             | 0                    | 154       |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- MG |
| US-07                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear                | US-07        | 4259264        | 658240        | 0           | 0          | 0            | 0             | 0                    | 154       |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- MG |
| US-07                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy               | US-07        | 4259264        | 658240        | 0           | 0          | 0            | 0             | 0                    | 154       |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- MG |
| US-07                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear                | US-07        | 4259264        | 658240        | 0           | 0          | 0            | 0             | 0                    | 154       |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- MG |
| US-07                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear                | US-07        | 4259264        | 658240        | 0           | 0          | 0            | 0             | 0                    | 154       |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- MG |
| US-07                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/29/2021 | 0800-1700 | Clear                | US-07        | 4259264        | 658240        | 0           | 0          | 0            | 0             | 0                    | 154       |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- MG |
| US-08                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Cloudy               | US-08        | 4259733        | 658478        | 0           | 0          | 0.0          | 0.0           | 0                    | 79        |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- HG |
| US-08                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear                | US-08        | 4259733        | 658478        | 0           | 0          | 0            | 0             | 0                    | 79        |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- HG |
| US-08                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy               | US-08        | 4259733        | 658478        | 0           | 0          | 0            | 0             | 0                    | 79        |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- HG |
| US-08                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy               | US-08        | 4259733        | 658478        | 0           | 0          | 0            | 0             | 0                    | 79        |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- HG |
| US-08                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear                | US-08        | 4259733        | 658478        | 0           | 0          | 0            | 0             | 0                    | 79        |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- HG |
| US-08                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear                | US-08        | 4259733        | 658478        | 0           | 0          | 0            | 0             | 0                    | 79        |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- HG |
| US-08                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear                | US-08        | 4259733        | 658478        | 0           | 0          | 0            | 0             | 0                    | 79        |             |              |          |           |           |            |           |                   |                            |                   |                      | Grassland-G: C- HG |

|      |                             |     |                             |      |                                 |    |                  |      |                           |    |              |
|------|-----------------------------|-----|-----------------------------|------|---------------------------------|----|------------------|------|---------------------------|----|--------------|
| C    | cattle                      | ED  | ephemeral drainage          | HG   | heavy grazing                   | MG | moderate grazing | PSRE | <i>Pseudacris regilla</i> | TT | tire tracks  |
| CYCA | <i>Cyzicus californicus</i> | FEW | freshwater emergent wetland | ID   | intermittent drainage           | P  | pond             | SW   | seasonal wetland          | UG | ungrazed     |
| D    | ditch                       | G   | grazed                      | LG   | light grazing                   | P  | plowed           | SWS  | seasonal wetland swale    | US | upland swale |
| D    | disturbed                   | H   | horse                       | LIOC | <i>Linderiella occidentalis</i> | PF | ponded feature   | T    | trash                     | VP | vernal pool  |

ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition |                      |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|-------------------|----------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                   | Diptera Chironomidae |
| VP-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Cloudy             | VP-01        | 4260016        | 659433        | 13.0        | 15.0       | 10.2         | 17.8          | 20.0                 | 18,165    |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | VP-01        | 4260016        | 659433        | 0           | 0          | 0            | 0             | 0                    | 18,165    |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | VP-01        | 4260016        | 659433        | 0           | 0          | 0            | 0             | 0                    | 18,165    |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | VP-01        | 4260016        | 659433        | 0           | 0          | 0            | 0             | 0                    | 18,165    |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | VP-01        | 4260016        | 659433        | 0           | 0          | 0            | 0             | 0                    | 18,165    |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | VP-01        | 4260016        | 659433        | 0           | 0          | 0            | 0             | 0                    | 18,165    |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-01                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | VP-01        | 4260016        | 659433        | 0           | 0          | 0            | 0             | 0                    | 18,165    |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-02                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Cloudy             | VP-02        | 4259919        | 659423        | 14.0        | 15.0       | 12.7         | 22.9          | 20.0                 | 181       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-02                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | VP-02        | 4259919        | 659423        | 11.5        | 10.2       | 13.0         | 18.0          | 16.0                 | 181       |             |              |          |           | x         |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-02                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | VP-02        | 4259919        | 659423        | 0           | 0          | 0            | 0             | 0                    | 181       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-02                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | VP-02        | 4259919        | 659423        | 0           | 0          | 0            | 0             | 0                    | 181       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-02                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | VP-02        | 4259919        | 659423        | 0           | 0          | 0            | 0             | 0                    | 181       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-02                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | VP-02        | 4259919        | 659423        | 0           | 0          | 0            | 0             | 0                    | 181       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-02                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | VP-02        | 4259919        | 659423        | 0           | 0          | 0            | 0             | 0                    | 181       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Cloudy             | VP-03        | 4259884        | 659391        | 15.0        | 16.0       | 7.6          | 20.3          | 120.0                | 314       |             |              |          |           |           | x          |           |                   |                            |                   | Grassland-G: C- MG   |

C cattle  
 CYCA *Cyzicus californicus*  
 D ditch  
 D disturbed

ED ephemeral drainage  
 FEW freshwater emergent wetland  
 G grazed  
 H horse

HG heavy grazing  
 ID intermittent drainage  
 LG light grazing  
 LIOC *Linderiella occidentalis*

MG moderate grazing  
 P pond  
 P plowed  
 PF ponded feature

PSRE *Pseudocris regilla*  
 SW seasonal wetland  
 SWS seasonal wetland swale  
 T trash

TT tire tracks  
 UG ungrazed  
 US upland swale  
 VP vernal pool

ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition |                      |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|-------------------|----------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                   | Diptera Chironomidae |
| VP-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | VP-03        | 4259884        | 659391        | 0           | 0          | 0            | 0             | 0                    | 314       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | VP-03        | 4259884        | 659391        | 0           | 0          | 0            | 0             | 0                    | 314       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | VP-03        | 4259884        | 659391        | 0           | 0          | 0            | 0             | 0                    | 314       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | VP-03        | 4259884        | 659391        | 0           | 0          | 0            | 0             | 0                    | 314       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | VP-03        | 4259884        | 659391        | 0           | 0          | 0            | 0             | 0                    | 314       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-03                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | VP-03        | 4259884        | 659391        | 0           | 0          | 0            | 0             | 0                    | 314       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Cloudy             | VP-04        | 4259883        | 659373        | 14.0        | 16.0       | 7.6          | 15.2          | 8.0                  | 37        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | VP-04        | 4259883        | 659373        | 11.9        | 12.2       | 6.0          | 10.0          | 1.0                  | 37        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | VP-04        | 4259883        | 659373        | 0           | 0          | 0            | 0             | 0                    | 37        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | VP-04        | 4259883        | 659373        | 0           | 0          | 0            | 0             | 0                    | 37        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | VP-04        | 4259883        | 659373        | 0           | 0          | 0            | 0             | 0                    | 37        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | VP-04        | 4259883        | 659373        | 0           | 0          | 0            | 0             | 0                    | 37        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-04                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | VP-04        | 4259883        | 659373        | 0           | 0          | 0            | 0             | 0                    | 37        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear              | VP-05        | 4260551        | 657915        | 0           | 0          | 0.0          | 0.0           | 0                    | 4,299     |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| VP-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | VP-05        | 4260551        | 657915        | 0           | 0          | 0            | 0             | 0                    | 4,299     |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |

|      |                             |     |                             |      |                                 |    |                  |      |                           |    |              |
|------|-----------------------------|-----|-----------------------------|------|---------------------------------|----|------------------|------|---------------------------|----|--------------|
| C    | cattle                      | ED  | ephemeral drainage          | HG   | heavy grazing                   | MG | moderate grazing | PSRE | <i>Pseudocris regilla</i> | TT | tire tracks  |
| CYCA | <i>Cyzicus californicus</i> | FEW | freshwater emergent wetland | ID   | intermittent drainage           | P  | pond             | SW   | seasonal wetland          | UG | ungrazed     |
| D    | ditch                       | G   | grazed                      | LG   | light grazing                   | P  | plowed           | SWS  | seasonal wetland swale    | US | upland swale |
| D    | disturbed                   | H   | horse                       | LIOC | <i>Linderiella occidentalis</i> | PF | ponded feature   | T    | trash                     | VP | vernal pool  |



ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition |                           |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|-------------------|---------------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                   | Diptera Chironomidae      |
| VP-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | VP-05        | 4260551        | 657915        | 0           | 0          | 0            | 0             | 0                    | 4,299     |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| VP-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | VP-05        | 4260551        | 657915        | 0           | 0          | 0            | 0             | 0                    | 4,299     |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| VP-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | VP-05        | 4260551        | 657915        | 0           | 0          | 0            | 0             | 0                    | 4,299     |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| VP-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | VP-05        | 4260551        | 657915        | 0           | 0          | 0            | 0             | 0                    | 4,299     |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| VP-05                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | VP-05        | 4260551        | 657915        | 0           | 0          | 0            | 0             | 0                    | 4,299     |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG        |
| VP-06                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear              | VP-06        | 4259701        | 658424        | 8.0         | 7.0        | 12.7         | 20.3          | 20.0                 | 58        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-D: TT; G: C- HG |
| VP-06                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/19/2021 | 0800-1700 | Cloudy             | VP-06        | 4259701        | 658424        | 13.0        | 16.0       | 10.0         | 25.0          | 25.0                 | 58        |             |              |          | x         | x         |            |           |                   |                            | x                 | Grassland-D: TT; G: C- HG |
| VP-06                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | VP-06        | 4259701        | 658424        | 0           | 0          | 0            | 0             | 0                    | 58        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-D: TT; G: C- HG |
| VP-06                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy             | VP-06        | 4259701        | 658424        | 0           | 0          | 0            | 0             | 0                    | 58        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-D: TT; G: C- HG |
| VP-06                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear              | VP-06        | 4259701        | 658424        | 0           | 0          | 0            | 0             | 0                    | 58        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-D: TT; G: C- HG |
| VP-06                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | VP-06        | 4259701        | 658424        | 0           | 0          | 0            | 0             | 0                    | 58        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-D: TT; G: C- HG |
| VP-06                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | VP-06        | 4259701        | 658424        | 0           | 0          | 0            | 0             | 0                    | 58        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-D: TT; G: C- HG |
| VP-07                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Cloudy             | VP-07        | 4259154        | 658788        | 14.0        | 13.0       | 20.3         | 30.5          | 30.0                 | 254       |             |              |          |           |           | x          |           |                   |                            |                   | Grassland-G: C- LG        |
| VP-07                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | VP-07        | 4259154        | 658788        | 12.6        | 9.7        | 12.0         | 16.0          | 30.0                 | 254       | LIOC        |              |          | x         | x         | x          |           |                   |                            | x                 | Grassland-G: C- LG        |

- |      |                             |     |                             |      |                                 |    |                  |      |                           |    |              |
|------|-----------------------------|-----|-----------------------------|------|---------------------------------|----|------------------|------|---------------------------|----|--------------|
| C    | cattle                      | ED  | ephemeral drainage          | HG   | heavy grazing                   | MG | moderate grazing | PSRE | <i>Pseudacris regilla</i> | TT | tire tracks  |
| CYCA | <i>Cyzicus californicus</i> | FEW | freshwater emergent wetland | ID   | intermittent drainage           | P  | pond             | SW   | seasonal wetland          | UG | ungrazed     |
| D    | ditch                       | G   | grazed                      | LG   | light grazing                   | P  | plowed           | SWS  | seasonal wetland swale    | US | upland swale |
| D    | disturbed                   | H   | horse                       | LIOC | <i>Linderiella occidentalis</i> | PF | ponded feature   | T    | trash                     | VP | vernal pool  |

ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                      |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans                  |              |          |           |           | Insects    |           |                   |                      | Platyhelminths (flatworms) | Habitat Condition  |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|----------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|------------------------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------|----------------------------|--------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions   | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans                  | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae | Diptera Chironomidae |                            |                    |
| VP-07                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear                | VP-07        | 4259154        | 658788        | 13.5        | 11.5       | 5.0          | 10.0          | 15.0                 | 254       | LIOC- male & female observed |              | x        | x         |           | x          |           | x                 | x                    | Grassland-G: C- LG         |                    |
| VP-07                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy               | VP-07        | 4259154        | 658788        | 0           | 0          | 0            | 0             | 0                    | 254       |                              |              |          |           |           |            |           |                   |                      | Grassland-G: C- LG         |                    |
| VP-07                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear                | VP-07        | 4259154        | 658788        | 0           | 0          | 0            | 0             | 0                    | 254       |                              |              |          |           |           |            |           |                   |                      | Grassland-G: C- LG         |                    |
| VP-07                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear                | VP-07        | 4259154        | 658788        | 0           | 0          | 0            | 0             | 0                    | 254       |                              |              |          |           |           |            |           |                   |                      | Grassland-G: C- LG         |                    |
| VP-07                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear                | VP-07        | 4259154        | 658788        | 0           | 0          | 0            | 0             | 0                    | 254       |                              |              |          |           |           |            |           |                   |                      | Grassland-G: C- LG         |                    |
| VP-08                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Partly Cloudy        | VP-08        | 4259012        | 658704        | 18.0        | 16.0       | 10.2         | 17.8          | 10.0                 | 245       |                              |              |          |           |           |            |           |                   |                      | Grassland-G: C- LG         |                    |
| VP-08                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy        | VP-08        | 4259012        | 658704        | 14.0        | 8.4        | 6.0          | 15.0          | 3.0                  | 245       |                              |              |          | x         | x         | x          |           |                   |                      | x                          | Grassland-G: C- LG |
| VP-08                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear                | VP-08        | 4259012        | 658704        | 0           | 0          | 0            | 0             | 0                    | 245       |                              |              |          |           |           |            |           |                   |                      | Grassland-G: C- LG         |                    |
| VP-08                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy               | VP-08        | 4259012        | 658704        | 0           | 0          | 0            | 0             | 0                    | 245       |                              |              |          |           |           |            |           |                   |                      | Grassland-G: C- LG         |                    |
| VP-08                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear                | VP-08        | 4259012        | 658704        | 0           | 0          | 0            | 0             | 0                    | 245       |                              |              |          |           |           |            |           |                   |                      | Grassland-G: C- LG         |                    |
| VP-08                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear                | VP-08        | 4259012        | 658704        | 0           | 0          | 0            | 0             | 0                    | 245       |                              |              |          |           |           |            |           |                   |                      | Grassland-G: C- LG         |                    |
| VP-08                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear                | VP-08        | 4259012        | 658704        | 0           | 0          | 0            | 0             | 0                    | 245       |                              |              |          |           |           |            |           |                   |                      | Grassland-G: C- LG         |                    |
| VP-09                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear                | VP-09        | 4258969        | 658474        | 12.0        | 16.0       | 7.6          | 15.2          | *                    | 33        |                              |              |          |           |           |            |           |                   |                      | Grassland-G: C- MG         |                    |
| VP-09                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/19/2021 | 0800-1700 | Precipitation - Full | VP-09        | 4258969        | 658474        | 12.0        | 11.0       | 7.0          | 14.0          | 1.0                  | 33        |                              |              |          | x         |           | x          |           |                   | x                    | Grassland-G: C- MG         |                    |

C cattle  
 CYCA *Cyzicus californicus*  
 D ditch  
 D disturbed

ED ephemeral drainage  
 FEW freshwater emergent wetland  
 G grazed  
 H horse

HG heavy grazing  
 ID intermittent drainage  
 LG light grazing  
 LIOC *Linderiella occidentalis*

MG moderate grazing  
 P pond  
 P plowed  
 PF ponded feature

PSRE *Pseudacris regilla*  
 SW seasonal wetland  
 SWS seasonal wetland swale  
 T trash

TT tire tracks  
 UG ungrazed  
 US upland swale  
 VP vernal pool

ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition |                      |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|-------------------|----------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                   | Diptera Chironomidae |
| VP-09                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | VP-09        | 4258969        | 658474        | 0           | 0          | 0            | 0             | 0                    | 33        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-09                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy             | VP-09        | 4258969        | 658474        | 0           | 0          | 0            | 0             | 0                    | 33        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-09                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear              | VP-09        | 4258969        | 658474        | 0           | 0          | 0            | 0             | 0                    | 33        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-09                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | VP-09        | 4258969        | 658474        | 0           | 0          | 0            | 0             | 0                    | 33        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-09                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | VP-09        | 4258969        | 658474        | 0           | 0          | 0            | 0             | 0                    | 33        |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-10                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Cloudy             | VP-10        | 4259988        | 659261        | 0           | 0          | 0.0          | 0.0           | 0                    | 140       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-10                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | VP-10        | 4259988        | 659261        | 0           | 0          | 0            | 0             | 0                    | 140       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-10                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | VP-10        | 4259988        | 659261        | 0           | 0          | 0            | 0             | 0                    | 140       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-10                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | VP-10        | 4259988        | 659261        | 0           | 0          | 0            | 0             | 0                    | 140       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-10                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | VP-10        | 4259988        | 659261        | 0           | 0          | 0            | 0             | 0                    | 140       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-10                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | VP-10        | 4259988        | 659261        | 0           | 0          | 0            | 0             | 0                    | 140       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-10                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | VP-10        | 4259988        | 659261        | 0           | 0          | 0            | 0             | 0                    | 140       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-11                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Cloudy             | VP-11        | 4259315        | 659113        | 11.0        | 10.0       | 12.7         | 25.4          | 25.0                 | 146       |             |              |          |           |           | x          |           |                   |                            |                   | Grassland-G: C- MG   |
| VP-11                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 2/17/2021 | 0800-1700 | Clear              | VP-11        | 4259315        | 659113        | 14.6        | 13.9       | 14.0         | 23.0          | 24.0                 | 146       |             |              |          | x         | x         | x          |           |                   |                            | x                 | Grassland-G: C- MG   |
| VP-11                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | VP-11        | 4259315        | 659113        | 0           | 0          | 0            | 0             | 0                    | 146       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- MG   |

|      |                             |     |                             |      |                                 |    |                  |      |                           |    |              |
|------|-----------------------------|-----|-----------------------------|------|---------------------------------|----|------------------|------|---------------------------|----|--------------|
| C    | cattle                      | ED  | ephemeral drainage          | HG   | heavy grazing                   | MG | moderate grazing | PSRE | <i>Pseudacris regilla</i> | TT | tire tracks  |
| CYCA | <i>Cyzicus californicus</i> | FEW | freshwater emergent wetland | ID   | intermittent drainage           | P  | pond             | SW   | seasonal wetland          | UG | ungrazed     |
| D    | ditch                       | G   | grazed                      | LG   | light grazing                   | P  | plowed           | SWS  | seasonal wetland swale    | US | upland swale |
| D    | disturbed                   | H   | horse                       | LIOC | <i>Linderiella occidentalis</i> | PF | ponded feature   | T    | trash                     | VP | vernal pool  |



ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                      |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   |                      | Platyhelminths (flatworms) | Habitat Condition  |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|----------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------|----------------------------|--------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions   | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae | Diptera Chironomidae |                            |                    |
| VP-11                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy               | VP-11        | 4259315        | 659113        | 0           | 0          | 0            | 0             | 0                    | 146       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| VP-11                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear                | VP-11        | 4259315        | 659113        | 0           | 0          | 0            | 0             | 0                    | 146       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| VP-11                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear                | VP-11        | 4259315        | 659113        | 0           | 0          | 0            | 0             | 0                    | 146       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| VP-11                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 11       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear                | VP-11        | 4259315        | 659113        | 0           | 0          | 0            | 0             | 0                    | 146       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| VP-12                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear                | VP-12        | 4259030        | 658383        | 12.0        | 13.0       | 10.2         | 17.8          | 15.0                 | 100       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| VP-12                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/19/2021 | 0800-1700 | Precipitation - Full | VP-12        | 4259030        | 658383        | 13.0        | 11.0       | 12.0         | 17.0          | 25.0                 | 100       |             |              |          | x         |           | x          |           |                   |                      | x                          | Grassland-G: C- MG |
| VP-12                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear                | VP-12        | 4259030        | 658383        | 0           | 0          | 0            | 0             | 0                    | 100       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| VP-12                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy               | VP-12        | 4259030        | 658383        | 0           | 0          | 0            | 0             | 0                    | 100       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| VP-12                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear                | VP-12        | 4259030        | 658383        | 0           | 0          | 0            | 0             | 0                    | 100       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| VP-12                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear                | VP-12        | 4259030        | 658383        | 0           | 0          | 0            | 0             | 0                    | 100       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| VP-12                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear                | VP-12        | 4259030        | 658383        | 0           | 0          | 0            | 0             | 0                    | 100       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| VP-13                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/4/2021  | 0800-1700 | Clear                | VP-13        | 4259012        | 658346        | 13.0        | 13.0       | 12.7         | 22.9          | 10.0                 | 195       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| VP-13                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/19/2021 | 0800-1700 | Precipitation - Full | VP-13        | 4259012        | 658346        | 12.0        | 12.0       | 14.0         | 20.0          | 30.0                 | 195       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| VP-13                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear                | VP-13        | 4259012        | 658346        | 12.6        | 11.8       | 12.0         | 20.0          | 10.0                 | 195       |             |              |          | x         |           | x          |           |                   | x                    | x                          | Grassland-G: C- MG |
| VP-13                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy               | VP-13        | 4259012        | 658346        | 0           | 0          | 0            | 0             | 0                    | 100       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |

C cattle  
 CYCA *Cyzicus californicus*  
 D ditch  
 D disturbed

ED ephemeral drainage  
 FEW freshwater emergent wetland  
 G grazed  
 H horse

HG heavy grazing  
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 LIOC *Linderiella occidentalis*

MG moderate grazing  
 P pond  
 P plowed  
 PF ponded feature

PSRE *Pseudacris regilla*  
 SW seasonal wetland  
 SWS seasonal wetland swale  
 T trash

TT tire tracks  
 UG ungrazed  
 US upland swale  
 VP vernal pool

ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   |                      | Platyhelminths (flatworms) | Habitat Condition  |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------|----------------------------|--------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae | Diptera Chironomidae |                            |                    |
| VP-13                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear              | VP-13        | 4259012        | 658346        | 0           | 0          | 0            | 0             | 0                    | 195       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| VP-13                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | VP-13        | 4259012        | 658346        | 0           | 0          | 0            | 0             | 0                    | 195       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| VP-13                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | VP-13        | 4259012        | 658346        | 0           | 0          | 0            | 0             | 0                    | 195       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- MG |
| VP-14                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Partly Cloudy      | VP-14        | 4258729        | 658527        | 15.0        | 15.0       | 10.2         | 22.9          | 4.0                  | 258       |             |              |          |           |           | x          |           |                   |                      |                            | Grassland-G: C- HG |
| VP-14                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | VP-14        | 4258729        | 658527        | 15.4        | 7.3        | 10.0         | 17.0          | 8.0                  | 258       |             |              |          | x         |           | x          |           |                   |                      | x                          | Grassland-G: C- HG |
| VP-14                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | VP-14        | 4258729        | 658527        | 0           | 0          | 0            | 0             | 0                    | 258       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| VP-14                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy             | VP-14        | 4258729        | 658527        | 0           | 0          | 0            | 0             | 0                    | 258       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| VP-14                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear              | VP-14        | 4258729        | 658527        | 0           | 0          | 0            | 0             | 0                    | 258       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| VP-14                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | VP-14        | 4258729        | 658527        | 0           | 0          | 0            | 0             | 0                    | 258       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| VP-14                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | VP-14        | 4258729        | 658527        | 0           | 0          | 0            | 0             | 0                    | 258       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- HG |
| VP-15                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Partly Cloudy      | VP-15        | 4258701        | 658584        | 15.0        | 14.0       | 25.4         | 38.1          | 425.0                | 425       |             |              | x        | x         |           | x          |           |                   |                      |                            | Grassland-G: C- LG |
| VP-15                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | VP-15        | 4258701        | 658584        | 15.7        | 10.2       | 26.0         | 42.0          | 425.0                | 425       |             |              |          | x         |           |            |           |                   |                      | x                          | Grassland-G: C- LG |
| VP-15                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | VP-15        | 4258701        | 658584        | 15.1        | 11.6       | 10.0         | 20.0          | 200.0                | 425       |             |              | x        | x         |           | x          |           |                   | x                    | x                          | Grassland-G: C- LG |
| VP-15                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy             | VP-15        | 4258701        | 658584        | 12.7        | 12.7       | 15.0         | 22.0          | 70.0                 | 425       |             |              | x        | x         | x         | x          |           |                   | x                    | x                          | Grassland-G: C- LG |
| VP-15                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear              | VP-15        | 4258701        | 658584        | 19.6        | 14.3       | 7.0          | 13.0          | 1.0                  | 425       |             |              |          |           |           |            |           |                   |                      |                            | Grassland-G: C- LG |

|      |                             |     |                             |      |                                 |    |                  |      |                           |    |              |
|------|-----------------------------|-----|-----------------------------|------|---------------------------------|----|------------------|------|---------------------------|----|--------------|
| C    | cattle                      | ED  | ephemeral drainage          | HG   | heavy grazing                   | MG | moderate grazing | PSRE | <i>Pseudacris regilla</i> | TT | tire tracks  |
| CYCA | <i>Cyzicus californicus</i> | FEW | freshwater emergent wetland | ID   | intermittent drainage           | P  | pond             | SW   | seasonal wetland          | UG | ungrazed     |
| D    | ditch                       | G   | grazed                      | LG   | light grazing                   | P  | plowed           | SWS  | seasonal wetland swale    | US | upland swale |
| D    | disturbed                   | H   | horse                       | LIOC | <i>Linderiella occidentalis</i> | PF | ponded feature   | T    | trash                     | VP | vernal pool  |

ATTACHMENT H  
 USFWS WET SEASON PROTOCOL SURVEY RESULTS FOR FEDERALLY LISTED BRANCHIOPODS - DATASHEETS

| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans                  |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition |                      |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|------------------------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|-------------------|----------------------|
| Feature ID #                                                     | County     | Qued        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans                  | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                   | Diptera Chironomidae |
| VP-15                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | VP-15        | 4258701        | 658584        | 0           | 0          | 0            | 0             | 0                    | 425       |                              |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| VP-15                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | VP-15        | 4258701        | 658584        | 0           | 0          | 0            | 0             | 0                    | 425       |                              |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- LG   |
| VP-16                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/3/2021  | 0800-1700 | Partly Cloudy      | VP-16        | 4258672        | 658568        | 16.0        | 17.0       | 22.9         | 45.7          | 40.0                 | 440       |                              |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| VP-16                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 2/18/2021 | 0800-1700 | Partly Cloudy      | VP-16        | 4258672        | 658568        | 10.3        | 8.6        | 29.0         | 42.0          | 250.0                | 440       |                              |              |          | x         |           |            |           |                   |                            | x                 | Grassland-G: C- HG   |
| VP-16                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/4/2021  | 0800-1700 | Clear              | VP-16        | 4258672        | 658568        | 11.9        | 12.3       | 10.0         | 20.0          | 40.0                 | 440       | LIOC- male & female observed |              | x        | x         |           | x          |           |                   | x                          | x                 | Grassland-G: C- HG   |
| VP-16                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 3/18/2021 | 0800-1700 | Cloudy             | VP-16        | 4258672        | 658568        | 0           | 0          | 0            | 0             | 0                    | 440       |                              |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| VP-16                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/1/2021  | 0800-1700 | Clear              | VP-16        | 4258672        | 658568        | 0           | 0          | 0            | 0             | 0                    | 440       |                              |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
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| VP-16                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 14       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | VP-16        | 4258672        | 658568        | 0           | 0          | 0            | 0             | 0                    | 440       |                              |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| VP-17                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 2/2/2021  | 0800-1700 | Cloudy             | VP-17        | 4259955        | 658099        | 12.0        | 13.0       | 2.5          | 7.6           | 5.0                  | 195       |                              |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| VP-17                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 2/19/2021 | 0800-1700 | Cloudy             | VP-17        | 4259955        | 658099        | 0           | 0          | 0            | 0             | 0                    | 195       |                              |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| VP-17                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/3/2021  | 0800-1700 | Cloudy             | VP-17        | 4259955        | 658099        | 0           | 0          | 0            | 0             | 0                    | 195       |                              |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| VP-17                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/17/2021 | 0800-1700 | Cloudy             | VP-17        | 4259955        | 658099        | 0           | 0          | 0            | 0             | 0                    | 195       |                              |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| VP-17                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 3/31/2021 | 0800-1700 | Clear              | VP-17        | 4259955        | 658099        | 0           | 0          | 0            | 0             | 0                    | 195       |                              |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |

C cattle  
 CYCA *Cyzicus californicus*  
 D ditch  
 D disturbed

ED ephemeral drainage  
 FEW freshwater emergent wetland  
 G grazed  
 H horse

HG heavy grazing  
 ID intermittent drainage  
 LG light grazing  
 LIOC *Linderiella occidentalis*

MG moderate grazing  
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 SW seasonal wetland  
 SWS seasonal wetland swale  
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TT tire tracks  
 UG ungrazed  
 US upland swale  
 VP vernal pool



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| USFWS Data for West Season Surveys for Large Listed Branchiopods |            |             |                          |                           |           |           |                    |              | UTM            |               | Temperature |            | Depth        |               | Surface Area (m x m) |           | Crustaceans |              |          |           |           | Insects    |           |                   | Platyhelminths (flatworms) | Habitat Condition |                      |
|------------------------------------------------------------------|------------|-------------|--------------------------|---------------------------|-----------|-----------|--------------------|--------------|----------------|---------------|-------------|------------|--------------|---------------|----------------------|-----------|-------------|--------------|----------|-----------|-----------|------------|-----------|-------------------|----------------------------|-------------------|----------------------|
| Feature ID #                                                     | County     | Quad        | Township/ Range/ Section | Surveyor/ Permit #        | Date      | Time      | Weather Conditions | Feature ID # | Northing Datum | Easting Datum | Air (°c)    | Water (°c) | Average (cm) | Est. Max (cm) | Present              | Est. Max. | Anostracans | Notostracans | Copepods | Ostracods | Cladocera | Coleoptera | Hemiptera | Diptera Culicidae |                            |                   | Diptera Chironomidae |
| VP-17                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/14/2021 | 0800-1700 | Clear              | VP-17        | 4259955        | 658099        | 0           | 0          | 0            | 0             | 0                    | 195       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |
| VP-17                                                            | Sacramento | Sloughhouse | T 7N / R 7E / S 10       | Heather Moine/TE-60147A-1 | 4/28/2021 | 0800-1700 | Clear              | VP-17        | 4259955        | 658099        | 0           | 0          | 0            | 0             | 0                    | 195       |             |              |          |           |           |            |           |                   |                            |                   | Grassland-G: C- HG   |

C cattle  
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HG heavy grazing  
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 LIOC *Linderiella occidentalis*

MG moderate grazing  
 P pond  
 P plowed  
 PF ponded feature

PSRE *Pseudacris regilla*  
 SW seasonal wetland  
 SWS seasonal wetland swale  
 T trash

TT tire tracks  
 UG ungrazed  
 US upland swale  
 VP vernal pool

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# **Appendix F**

## Aquatic resources Delineation Report



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Aquatic Resources Delineation Report

# Sloughhouse Solar Project

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**JULY 2022**

*Prepared for:*

**SLOUGHHOUSE SOLAR, LLC**

1166 Avenue of the Americas, 9th Floor  
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# Acronyms and Abbreviations

| Acronym/Abbreviation | Definition                                 |
|----------------------|--------------------------------------------|
| amsl                 | above mean sea level                       |
| APN                  | Assessor's Parcel Number                   |
| APT                  | Antecedent Precipitation Tool              |
| CDFW                 | California Department of Fish and Wildlife |
| CFR                  | Code of Federal Regulations                |
| CWA                  | Clean Water Act                            |
| FAC                  | Facultative                                |
| FACW                 | Facultative Wetland                        |
| FEMA                 | Federal Emergency Management Agency        |
| FGC                  | Fish and Game Code                         |
| NWI                  | National Wetlands Inventory                |
| NWPR                 | National Waters Protection Rule            |
| NWW                  | Non-Wetlands Waters                        |
| OBL                  | Obligate                                   |
| OHWM                 | ordinary high water mark                   |
| Project              | Sloughhouse Solar Project                  |
| PSA                  | Project Study Area                         |
| RWQCB                | Regional Water Quality Control Board       |
| SSHCP                | South Sacramento Habitat Conservation Plan |
| TNW                  | traditionally navigable water              |
| TOB                  | top of bank                                |
| USACE                | U.S. Army Corps of Engineers               |
| UPL                  | Upland                                     |

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# 1 Executive Summary

This Aquatic Resources Delineation Report (report) was prepared in accordance with the U.S. Army Corps of Engineers (USACE) *Sacramento District Minimum Standards for Acceptance of Aquatic Resources Delineation Reports* (USACE 2016), the *USACE Wetland Delineation Manual* (USACE 1987), the *USACE Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008a), and the *USACE Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008b). Dudek conducted a field delineation in October and November 2020 to identify aquatic resources in the approximately 732.26-acre Project Study Area (PSA) that may be potentially subject to agency jurisdiction pursuant to regulations in Sections 401 and 404 of the Clean Water Act (CWA), Porter-Cologne Water Quality Control Act, and California Fish and Game Code (FGC). Specifically, the PSA is comprised of the solar development area of approximately 371.72 acres, and the adjacent other lands of 360.54 acres. Below, Table 1, Summary of Aquatic Resources in the Project Study Area, summarizes the delineation findings. Potential jurisdictional determinations, as discussed in Section 6, Conclusion, are considered preliminary until verified by the USACE Sacramento District.

**Table 1. Summary of Aquatic Resources in the Project Study Area**

| Feature ID                                  | Cowardin Code <sup>1</sup> | PSA – Total Acreage | PSA – Total Linear Feet |
|---------------------------------------------|----------------------------|---------------------|-------------------------|
| <b>Wetlands</b>                             |                            |                     |                         |
| Freshwater Emergent Wetland                 | PEM1                       | 0.02                | –                       |
| Pond                                        | PEM1                       | 17.01               | –                       |
| Seasonal Wetland                            | PEM2                       | 14.16               | –                       |
| Vernal Pool                                 | PEM2                       | 6.30                | –                       |
| <i>Total Wetlands (acres)</i>               |                            | <b>37.48</b>        | <b>–</b>                |
| <b>Non-Wetland Waters (NWW)<sup>2</sup></b> |                            |                     |                         |
| Ditch                                       | R5                         | 1.93                | 4,385.29                |
| Ephemeral Drainage                          | R6                         | 1.11                | 3,431.84                |
| Intermittent Drainage                       | R4                         | 2.36                | 4,462.81                |
| Perennial Drainage                          | R3                         | 24.10               | 4,506.29                |
| Seasonal Wetland Swale                      | R6                         | 2.15                | 8,807.18                |
| Upland Swale                                | U                          | 0.63                | 1,837.55                |
| <i>Total NWWs (acres)</i>                   |                            | <b>32.28</b>        | <b>28,151.21</b>        |
| <b>Total</b>                                |                            | <b>69.76</b>        | <b>28,152.21</b>        |

**Source:** USFWS 2013.

**Notes:** PSA = Project Study Area.

<sup>1</sup> Cowardin Code: PEM1= persistent, emergent, palustrine; PEM2 = nonpersistent, palustrine, emergent; R3 = upper perennial, riverine; R4 = Intermittent, riverine; R5 = unknown perennial, riverine; R6 = riverine, ephemeral (a wetland, spring, stream, river, pond, or lake that only exists for a short period); U = upland

<sup>2</sup> Acreage of the NWWs extend to ordinary high water and/or where the OHWM is equivalent to the top of bank.

**Contact Information for Site Access:**

Sloughhouse Solar, LLC is the Project applicant and will act as the primary point of contact for site access.

**Property Owner:**

Sloughhouse Solar, LLC  
1166 Avenue of the Americas, 9th Floor  
New York, New York 10036  
Contact: Daniel Menahem  
202.390.7772  
daniel.menahem@deshaw.com

**Agent:**

Dudek  
853 Lincoln Way, Suite 208  
Auburn, California 95603  
Contact: Morgan Kennedy  
530.863.4643  
mkennedy@dudek.com

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## 2 Introduction

This report documents the methods and results of the aquatic resources delineation within the approximately 732.26-acre PSA for the Sloughhouse Solar Project (Project) in Sacramento County, California (Figure 1). This report identifies the potentially jurisdictional aquatic resources within the PSA that may be subject to agency jurisdiction pursuant to regulations in Section 404 of the Clean Water Act (CWA). This report was produced in accordance with the USACE *Sacramento District Minimum Standards for Acceptance of Aquatic Resources Delineation Reports* (USACE 2016), the *USACE Wetland Delineation Manual* (USACE 1987), the *USACE Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008a), and the *USACE Field Guide to the Identification of the OHWM in the Arid West Region of the Western United States* (USACE 2008b). This report is being provided to the USACE with a *Request for Aquatic Resources Delineation Verification or Jurisdictional Determination* (USACE 2017) (Appendix A, Request for Aquatic Resources Delineation Verification or Jurisdictional Determination). The results of this delineation are considered preliminary until verified by the Sacramento District of USACE.

Furthermore, the delineation conducted within the PSA also defined areas under the jurisdiction of California Department of Fish and Wildlife (CDFW), pursuant to Sections 1600 through 1603 of the California Fish and Game Code (FGC), and the Regional Water Quality Control Board (RWQCB), pursuant to CWA Section 401 and the Porter-Cologne Water Quality Control Act.

### 2.1 Project Description

The Project is a solar photovoltaic energy-generating facility located on the southwest corner of Meiss Road and Dillard Road, adjacent to an existing solar energy facility located at 7794 Dillard Road, Sacramento County, California. The Project is being proposed to be developed by Sloughhouse Solar, LLC (Applicant) to sell its electricity and all renewable and environmental attributes to an electric utility purchaser under long-term contracts to help meet California Renewables Portfolio Standard goals. The Project proponent would construct, operate, and decommission a solar generation and energy storage facility within a solar development area of approximately 371.72 acres (inclusive of solar field, energy storage, Project substation(s), roads, retention basins, etc.) within the greater approximately 732.26-acre PSA. The remaining 360.54 acres of the PSA are being included in this report to be referred to as adjacent other lands. The Project may also include additional auxiliary facilities such as raw water/fire water storage, treated water storage, stormwater retention basins, water filtration buildings and equipment, and equipment control buildings, septic system(s), and parking within the proposed development area. The design and construction of the buildings, solar arrays (panels, etc.), energy storage facilities, and auxiliary facilities will be consistent with Sacramento County building standards. The Project design is preliminary and not yet finalized.

### 2.2 Project Location and Directions

The approximately 732.26-acre PSA is located at the southwest corner of the intersection of Meiss Road and Dillard Road in Sloughhouse in eastern Sacramento County (Figure 1). To get to the PSA from Sacramento, travel east on U.S. 50 for approximately 6 miles. Take exit 11 for Watt Avenue and turn right onto South Watt Avenue, continuing for 1.5 miles. Turn left onto California Highway 16 East/Jackson Road and travel for approximately 12 miles. Turn

right onto Dillard Road. In 1.7 miles, the PSA will be located at the southwest corner of Dillard Road and Meiss Road. The PSA can be accessed from gates off both Dillard Road and Meiss Road (Figure 2).

- County- Sacramento
- Public Land Survey System- Cosumnes Land Grant
- U.S. Geological Survey 7.5-Minute Quadrangle- Sloughhouse
- Latitude, Longitude (Decimal Degrees)- 38.473731° , -121.184568° (Centroid)
- Assessor Parcel Numbers (APNs)- 12601100010000, 12601100030000
- Elevation Range- 95 to 160 feet above mean sea level (amsl)
- Average Elevation- 128 feet amsl
- PSA- 732.26 acres

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# 3 Regulatory Setting

## 3.1 Federal

### 3.1.1 Clean Water Act: Section 404

Pursuant to Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged and/or fill material into waters of the United States. Activities in waters for which a USACE permit may be required. Any person or public agency proposing to discharge dredged or fill material into waters of the United States, including jurisdictional wetlands, must obtain a Section 404 permit from USACE.

The wetlands determination process is initiated by submitting either an Approved Jurisdictional Determination or a Preliminary Jurisdiction Determination request along with an Aquatic Resources Delineation Report to determine if USACE-jurisdictional wetlands or other waters are present on the subject property. The wetland determination process is complete with the issuance of a written geographic jurisdictional determination verification from USACE. Compliance is required with Section 404 of the Clean Water Act (CWA) if a project activity will discharge dredged or fill materials to verified waters of the United States, including wetlands. The most common permits issued by the USACE Regulatory Program are Nationwide Permits covering certain activities identifies in the USACE regulations, and Individual Permits, intended for those projects that do not qualify for a nationwide permit.

The definition of waters of the United States establishes the geographic scope of the USACE jurisdiction under Section 404 of the CWA. On December 8, 2021, the U.S. Environmental Protection Agency (EPA) and USACE published in the Federal Register a proposed rule revising the definition of waters of the United States (86 Code of Federal Regulations [CFR] 69372-69450). This proposed rule would revise much of the 2020 Navigable Waters Protection Rule implemented during the Trump administration and restores the regulations in effect prior to the Obama Administration's 2015 Clean Water Rule. Moving forward, USACE and EPA propose to reinstate the pre-2015 definition of waters of the United States along with updates to reflect two notable Supreme Court decisions described in more detail below.

#### *Rapanos v. United States and Carabell v. United States*

In 2007 and again in 2008, USACE and EPA developed guidance for implementing the definition of waters of the United States under the CWA following the *Rapanos v. United States* and *Carabell v. United States* Supreme Court decision (EPA 2008). In accordance with both the original and revised guidance, jurisdiction over these waters will be as follows:

- Traditional navigable waters
- Wetlands adjacent to traditional navigable waters
- Non-navigable tributaries of traditional navigable waters that are relatively permanent (i.e., the tributaries typically flow year-round or have continuous flow at least seasonally)
- Wetlands that directly abut such tributaries



USACE will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a traditional navigable water:

- Non-navigable tributaries that do not typically flow year-round or have continuous flow at least seasonally (i.e., ephemeral stream channels)
- Wetlands adjacent to such tributaries
- Wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary

USACE will apply a significant nexus evaluation to potential waters of the United States as follows:

- A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if in combination they significantly affect the chemical, physical, and biological integrity of downstream traditional navigable waters
- Significant nexus includes consideration of hydrologic and ecologic factors including, but not limited to, volume, duration, and the frequency of surface water flow in the resource and its proximity to a traditional navigable water, and the functions performed by the resource on adjacent wetlands.

### *Solid Waste Agency of Northern Cook County v. USACE*

In 2001 and again in 2003, the agencies developed guidance to address the above definition of waters of the United States under the CWA following the *Solid Waste Agency of Northern Cook County v. USACE* U.S. Supreme Court Decision that “isolated, non-navigable, intrastate” waters could not be claimed as jurisdictional by USACE based on their use by migratory birds (EPA 2000). Although the Supreme Court did not specifically address the meaning of the word “isolated,” it upheld the above definition of “adjacent” wetlands (and other waters), which are by definition wetlands that are “bordering, contiguous, or neighboring” other jurisdictional waters. Therefore, the term “isolated wetland” has implicitly been defined as wetlands that are not bordering, contiguous, or neighboring other waters. The 2001 decision did not, however, define the term “adjacent,” nor did it state whether the basis for adjacency is geographic proximity or hydrology. As established by the Supreme Court in *United States v. Riverside Bayview Homes Inc.* in 1985, “wetlands separated from other waters by man-made dikes or barriers, natural river berms, beach dunes, and the like are ‘adjacent wetlands.’”

### Current (Proposed) Definition of Waters of the United States, Including Wetlands

As currently proposed by USACE and EPA, the term waters of the United States include the following (86 CFR 69372-69450):

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. “Other Waters” that meet either the “Relatively Permanent Standard” or the “Significant Nexus Standard”. All Other Waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce including any such waters:
  - a. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
  - b. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

- c. Which are used or could be used for industrial purposes by industries in interstate commerce;
  - d. All impoundments, and wetlands adjacent to impoundments, that meet either the Relatively Permanent Standard or the Significant Nexus Standard;
4. Tributaries of waters;
  5. The territorial seas; and
  6. Wetlands adjacent to waters (other than waters that are themselves wetlands); waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition) are not waters of the U.S.

The Relatively Permanent Standard refers to waters that are relatively permanent, standing, or continuously flowing, and waters with a continuous surface connection to such waters. The Significant Nexus Standard refers to waters that either alone, or in combination with similarly situated waters in the region, significantly affect the chemical, physical, or biological integrity of traditional navigable waters, interstate waters, or the territorial seas (86 CFR 69372-69450).

Wetlands are “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3). USACE predominantly relies on the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual (USACE 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region – Version 2.0 (USACE 2008a) methodology to determine the presence of jurisdictional wetlands in California. USACE relies on the presence of three criteria to determine if an area is a wetland: hydrophytic vegetation, hydric soils, and hydrology. Hydrophytic vegetation refers to a predominance of plant life that is adapted to life in wet conditions. Hydric soils refer to soils that saturate, flood, or pond long enough during the growing season to develop anaerobic conditions in the upper part. Lastly, hydrology refers to the presence of water, either above the soil surface or within the upper 12 to 18 inches of the soil profile just below the soil surface (USACE 2008a).

For linear, non-wetland waters of the United States (e.g., perennial, intermittent, or ephemeral drainages), the lateral limits of USACE jurisdiction extend to the reliable ordinary high water mark (OHWM). As defined in the CFR Title 33, Section 328.3(e), the OHWM is “that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.” If wetlands are present adjacent to such resources and they meet the Relatively Permanent Standard or the Significant Nexus Standard, then jurisdiction would likely extend to the limit of these wetlands (86 CFR 69372-69450). Further guidance for determining jurisdictional limits in California is detailed in USACE’s *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008b).

## 3.2 Additional Regulatory Information

### 3.2.1 Agriculture and the Clean Water Act

Under the CWA, discharges of pollutants into waters of the United States are unlawful unless authorized by a permit. Section 404 permits authorize discharges of dredged or fill material into waters of the United States, including

wetlands. The USACE and the EPA are both responsible for implementing aspects of the CWA Section 404 permitting program. Most routine, on-going farming activities do not require CWA Section 404 permits. CWA Section 404(f) exempts normal farming, silviculture, and ranching from permitting requirements. However, if a farming activity is associated with bringing waters of the United States into a new use where the flow, circulation, or reach of that water might be affected (e.g., bringing a wetland into agricultural production or converting an agricultural wetland into a non-wetland area), the activity may require a permit (CRS 2020).



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# 4 Methodology

## 4.1 Desktop Analysis

Prior to conducting fieldwork, Dudek reviewed the following available resources to identify portions of the PSA with a probability for containing potential jurisdictional aquatic resources:

- Antecedent Precipitation Tool (APT) (USACE 2020a).
- Federal Emergency Management Agency’s (FEMA) National Flood Hazard Layer (FEMA 2019).
- Google Earth current and historical aerial imagery (Google Earth 2020).
- Natural Resources Conservation Service Web Soil Survey (USDA 2020a).
- South Sacramento Habitat Conservation Plan (SSHCP) (County of Sacramento et. al. 2018).
- U.S. Fish and Wildlife Service National Wetlands Inventory (NWI) Mapper (USFWS 2020).
- U.S. Geological Survey Historical Topographical map data (USGS 2020a).
- U.S. Geological Survey National Hydrography Dataset (USGS 2020b).

## 4.2 Field Delineation

Dudek conducted a preliminary aquatic resources delineation of the approximately 732.26-acre PSA on October 27, 29, and 30, 2020; November 4 and 9–13, 2020; and March 3, 2021 (Table 2, Field Survey Schedule, Personnel, and Conditions).

**Table 2. Field Survey Schedule, Personnel, and Conditions**

| Date       | Hours                | Personnel                                       | Conditions                                    |
|------------|----------------------|-------------------------------------------------|-----------------------------------------------|
| 10/27/2020 | 8:00 a.m.- 4:00 p.m. | Laura Burris,<br>Allie Sennett,<br>Anna Godinho | 43 °F -73 °F; 0% cloud cover; 0-5 mph wind    |
| 10/28/2020 | 7:45 a.m.- 4:45 p.m. | Laura Burris,<br>Allie Sennett,<br>Anna Godinho | 40 °F -85 °F; 0% cloud cover; 0-3 mph wind    |
| 10/30/2020 | 7:30 a.m.-2:30 p.m.  | Laura Burris,<br>Anna Godinho                   | 41 °F -77 °F; 0% cloud cover; 0-3 mph wind    |
| 11/04/2020 | 8:30 a.m.-3:30 p.m.  | Anna Godinho,<br>Paul Keating                   | 64 °F -78 °F; 0% cloud cover; 0-3 mph wind    |
| 11/09/2020 | 8:00 a.m.- 4:00 p.m. | Allie Sennett,<br>Adam Crawford                 | 33 °F -50 °F; 0% cloud cover; 0-3 mph wind    |
| 11/10/2020 | 8:00 a.m.-4:00 p.m.  | Anna Godinho,<br>Adam Crawford                  | 48 °F -55 °F; 0% cloud cover; 0 mph wind      |
| 11/11/2020 | 7:30 a.m.-4:45 p.m.  | Laura Burris,<br>Allie Sennett                  | 36 °F -70 °F; 0-20% cloud cover; 0-5 mph wind |
| 11/12/2020 | 7:30 a.m.-4:00 p.m.  | Allie Sennett,<br>Anna Godinho                  | 33 °F -74 °F; 0% cloud cover; 0-3 mph wind    |

**Table 2. Field Survey Schedule, Personnel, and Conditions**

| Date       | Hours                 | Personnel                     | Conditions                                   |
|------------|-----------------------|-------------------------------|----------------------------------------------|
| 11/13/2020 | 7:30 a.m.–1:30 p.m.   | Laura Burris,<br>Anna Godinho | 41 °F –57 °F; 100% cloud cover; 0–3 mph wind |
| 3/3/2021   | 10:00 a.m.–11:00 a.m. | Anna Godinho                  | 46 °F –61 °F; 100% cloud cover; 0–4 mph wind |

Potential modeled aquatic resources were delineated based on methodology described in the USACE *Wetland Delineation Manual* (USACE 1987) and the USACE *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008a). Non-Wetland Waters (NWW) of the U.S. were delineated based on the presence of an OHWM, as determined using the methodology in the USACE *Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008b). While in the field, aquatic resources were mapped and recorded using a digital collection application (Collector®) with sub-meter accuracy. All figures generated for this report follow the USACE *Updated Map and Drawing Standards for the South Pacific Division Regulatory Program* (USACE 2016). Representative photographs of the PSA are included in Appendix B, Photo Record.

All plant species encountered were identified to the lowest taxonomic level needed to determine wetland plant indicator status. Those species that could not be immediately identified were brought into the laboratory for further investigation. Latin names follow the Jepson Interchange “List of Currently Accepted Names of Native and Naturalized Plants of California” (Jepson Flora Project 2021), and common names follow the U.S. Department of Agriculture (USDA) NRCS “PLANTS” database (USDA 2021b). Wetland plant indicator status for each plant was determined using the National Wetland Plant List for the Arid West Region (USACE 2018). Appendix C, Observed Plant Species Compendium, contains a complete list of plant species observed during the field delineation.

Dudek took sample points on standardized Wetland Determination at resource locations to assess the potential for hydric soils, hydrology, and hydrophytic vegetation (see details in Section 4.2.1, Wetland Indicator Assessment). Data at representative stream transects were collected on standardized OHWM Datasheets to assess channel hydrology and geomorphology. Sample point Wetland Determination and OHWM Datasheets are included in this report as Appendix F, Datasheets. Wetland sample points and stream transects were recorded in the field using a Trimble R1 GNSS Receiver with sub-meter accuracy and ArcGIS Collector app for iOS. Results of the wetland sample points, and stream transect analyses are presented in Section 5.3, Sample Point and Transect Summary.

## 4.2.1 Wetland Indicator Assessment

Pursuant to the USACE protocols (USACE 1987; USACE 2008a), key explicit environmental criteria for determining the presence of potential jurisdictional aquatic resources in the PSA are as follows:

- **Soil-** Soil characteristics that result from the influence of periodic or permanent inundation or soil saturation for extended periods that further affect anaerobic conditions (i.e., chemical reduction in the soils or hydric soils).
- **Hydrology-** The presence of inundated or saturated soil conditions resulting from permanent or periodic inundation by groundwater or surface water.
- **Vegetation-** A prevalence of vegetation typically adapted for life in saturated soil conditions (i.e., hydrophytic vegetation).



Positive indicators of all three parameters are normally present in wetlands. Presence of primary and secondary wetland hydrology indicators were documented for each identified aquatic resource feature in the PSA. Potential jurisdictional wetlands exhibiting atypical conditions were delineated in accordance with USACE protocols (USACE 1987; USACE 2008a) for situations involving vegetation, soil, and hydrology that may be naturally problematic and/or significantly disturbed.

## 4.3 Ordinary High Water Mark Assessment

The U.S. Army Corps of Engineers Field Guide to the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States (USACE 2008b) was used to provide technical guidance for delineating the OHWM, which is based on the physical and biological signatures established and maintained at the boundaries of an active channel. The OHWM guide addresses the underlying hydrologic and geomorphic concepts pertaining to the OHWM and the field indicators, methods, and additional lines of evidence used to assess and delineate the OHWM. Delineation of the active channel signature (i.e., the OHWM) is based largely on identification of three primary physical or biological indicators (USACE 2008b):

- Topographic break in slope
- Change in sediment characteristics
- Change in vegetation characteristics (species or cover)

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# 5 Results

## 5.1 Environmental Setting

The PSA is located within eastern Sacramento County at the eastern edge of the Central Valley, less than 15 miles from the western foothills of the Sierra Nevada Mountains. The PSA is less than 1 mile south of State Route 16 and approximately 18 miles southeast of the City of Sacramento. The PSA is surrounded by rural residential development and open space generally composed of annual grassland and agricultural fields. A retention basin complex associated with a caviar farming facility adjoins the Project to the north; the Cosumnes River adjoins the PSA to the west; and an existing solar development is located within the southeast corner of the PSA. An orchard is located across Dillard Road to the southeast. The PSA is primarily used for cattle grazing or other agricultural operations, and there is an existing solar facility (Figure 2).

### 5.1.1 Climate and Rainfall

The PSA is in a semi-arid climate where average annual temperatures range from approximately 53°F to 91°F, and the average annual precipitation is 18.15 inches. On average, the months with the highest rainfall are December and January, and July has the least precipitation (WRCC 2020).

According to data from the Sacramento WB City weather station, total precipitation recorded from October 1, 2019, through September 30, 2020, was 17.92 inches, approximately 61% of normal (CDEC 2020). Therefore, the Project region had below normal hydrological conditions in the year preceding the survey. The Sacramento WB City weather station is located approximately 18 miles west of the PSA at an elevation of approximately 25 feet amsl.

The USACE APT was used to assess the amount of precipitation received in the review area during the delineation (USACE 2020a). The tool calculated that the watersheds within the review area (sampled at Hydrologic Unit Code 8 geographic scope) experienced, on average, normal antecedent precipitation conditions on the dates that the delineation fieldwork was conducted (October 27 through November 13). The complete results of the APT query can be found in Appendix D, Antecedent Precipitation Tool Output.

### 5.1.2 Soil and Terrain

The PSA is in the eastern Central Valley. Elevations of the PSA range from approximately 95 feet amsl in the western portion of the PSA, to 160 feet amsl in the southeastern portion of the PSA.

According to the Natural Resources Conservation Service (USDA 2020a), 16 soil units were mapped within the PSA. Each soil unit, its proportion of hydric soils, drainage class (i.e., frequency and duration of wet periods in conditions like those in which it was developed), and typical landform or geomorphic position within the landscape is detailed in Table 3, Summary of Soil Units in the PSA below (Figure 3) (USDA 2020a).

Six of the 16 soil units identified in the PSA are listed as hydric soils. Hydric soils are defined by the National Technical Committee for Hydric Soils as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation. Soils encountered during the field visits were generally clay to clay loam soils.



**Table 3. Summary of Soil Units Within the Project Study Area**

| Soil Map Unit Name                                   | Landform                       | Drainage Class                                | Hydric | Total Area (acres) |
|------------------------------------------------------|--------------------------------|-----------------------------------------------|--------|--------------------|
| Bruella sandy loam, 0%–2% slopes                     | Terraces                       | Well-drained                                  | No     | 2.44               |
| Bruella sandy loam, 2%–5% slopes                     | Terraces                       | Well-drained                                  | No     | 58.80              |
| Columbia sandy loam, 0%–2% slopes                    | Flood plains                   | Somewhat poorly drained, occasionally flooded | Yes    | 17.93              |
| Galt clay, 0%–1% slopes, MLRA 17                     | Basin floors on fan remnants   | Somewhat poorly drained                       | Yes    | 33.0               |
| Galt clay, 2%–5% slopes, MLRA 17                     | Basin floors on fan remnants   | Moderately well drained                       | Yes    | 126.62             |
| Hadselville-Pentz complex, 2%–30% slopes             | Hills                          | Moderately well drained to well drained       | No     | 226.32             |
| Peters clay, 1%–8% slopes                            | Hills                          | Well drained                                  | No     | 56.94              |
| Redding gravelly loam, 0%–8% slopes, MLRA 17         | Fan remnants                   | Moderately well drained                       | No     | 14.93              |
| Reiff fine sandy loam, 0%–2% slopes                  | Flood plains                   | Well drained, occasionally flooded            | No     | 96.11              |
| Sailboat silt loam, drained, 0%–2% slopes, MLRA 17   | Flood plains on natural levees | Somewhat poorly drained, occasionally flooded | Yes    | 3.50               |
| San Joaquin silt loam, 0%–3% slopes                  | Terraces                       | Moderately well drained                       | No     | 14.02              |
| San Joaquin silt loam, 0%–8% slopes                  | Terraces                       | Moderately well drained                       | No     | 52.45              |
| San Joaquin-Durixeralfs complex, 0%–1% slopes        | Terraces                       | Moderately well drained to well drained       | No     | 0.25               |
| San Joaquin-Galt complex, leveled, 0%–1% slopes      | Terraces                       | Moderately well drained                       | Yes    | 0.52               |
| San Joaquin-Galt complex, 0%–3% slopes               | Terraces                       | Moderately well drained                       | Yes    | 18.59              |
| San Joaquin-Xerarents complex, leveled, 0%–1% slopes | Terraces                       | Moderately well drained to well drained       | No     | 3.52               |

**Source:** USDA 2020c.

**Note:** MLRA = Major Land Resource Area.

<sup>1</sup> Hydric soil- defined by the USADA (i.e., formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part); if hydric conditions are present within the soil unit.

### 5.1.3 Watershed and Hydrology

The PSA occurs within the Upper Cosumnes River watershed, which drains approximately 180 square miles of land in El Dorado, Amador, and Sacramento Counties (Hydrological Unit Code 1804001306) (CDFW 2020). A complex

of seasonally inundated aquatic features generally drains the PSA in a southwesterly direction, and the Cosumnes River flows within the western boundary of the PSA. The western half of the PSA is located within the FEMA National Flood Hazard Layer 1% 100-year floodplain of the Cosumnes River (FEMA 2019). However, the portion of the Cosumnes River within the PSA is bounded by levees intended to contain the river and protect against overtopping during a normal rain year. The NWI maps numerous aquatic resources in the PSA, including Freshwater Emergent Wetland, Freshwater Forested/Shrub Wetland, Freshwater Pond, and Riverine (USFWS 2020). The NWI dataset is based on coarse aerial mapping (Figure 4).

Additionally, Appendix E, Land Cover Type Report for the SSHCP contains numerous other aquatic resources that were previously mapped within the PSA when the SSHCP was created (County of Sacramento et. al. 2018). The original SSHCP geographic model of aquatic resources, including vernal pool and swale land cover types, are based on interpretation of black and white aerial imagery dated March 2001. During SSHCP preparation, field surveys were conducted within selected parcels to provide recognition of signatures for aerial interpretation of the inaccessible portions field survey area. Those uncertain areas that were not contained in the field survey areas or easily identified from aerial photographs were spot-checked from public roads as feasible. The SSHCP identified individual vernal pool watershed boundaries using LIDAR data (i.e., County of Sacramento et. al. 2018 and flow modeling).

## 5.1.4 Vegetation Communities and Other Land Cover Types

Vegetation communities and land cover types within the PSA consist of a combination of terrestrial non-vegetative land covers and natural vegetation communities. The vegetation communities and land covers within the PSA were mapped using the SSHCP land cover data (County of Sacramento et. al. 2018). SSHCP vegetation communities and land cover types occurring within the PSA include agricultural, California annual grassland, low density development, mixed riparian forest, urban, valley foothill riparian, and valley grassland. A total of 75 species of native or naturalized plants—34 native (45%) and 41 non-natives (55%)—were recorded in the PSA during the field delineation (see Appendix C, Observed Plant Species Compendium).

### 5.1.4.1 Natural Vegetation Communities

#### California Annual Grassland and Valley Grassland

California annual grassland and valley grassland are the dominant vegetation community present in the PSA. Dominant species in this community include soft brome (*Bromus hordeaceus*), medusa head (*Elymus caput-medusae*), and narrow tarweed (*Holocarpha virgata*). The shrub and tree layers are absent from this vegetation community. There are numerous aquatic features that occur throughout the grassland.

#### Mixed Riparian Woodland and Valley Foothill Riparian

Mixed riparian woodland and valley foothill riparian comprise the riparian corridor adjacent to the Cosumnes River, a portion of which is located within the PSA. Valley oak (*Quercus lobata*) was the dominant overstory species, with a lesser abundance of Fremont's cottonwood (*Populus fremontii*), Goodding's black willow (*Salix gooddingii*), Northern California walnut (*Juglans hindsii*), and coast live oak (*Quercus agrifolia*). Shrubs occurred intermittently and included Himalayan blackberry (*Rubus armeniacus*), elderberry (*Sambucus* sp.), and California grape (*Vitis californica*). The herbaceous layer was dominated by disturbance-tolerant upland species, including yellow star-

thistle (*Centaurea solstitialis*), Italian plumeless thistle (*Carduus pycnocephalus*), and non-native grasses like those described for California annual grassland and valley grassland vegetation communities above.

#### 5.1.4.2 Other Land Cover Types

##### **Agricultural**

Agricultural land cover comprises a large field to the east of the Cosumnes River riparian corridor and levee. Land cover classified as agricultural typically includes lands where farming and other agricultural practices take place, including pastures (hay and alfalfa), row crops and other unidentified croplands.

##### **Low Density Development and Urban**

These land cover types include areas that have been completely altered by human activities and contain little to no vegetation. Such areas include buildings, paved and gravel roadways and trails, gravel lots, and other constructed environments. Low density development and urban areas within the PSA include two residences along Meiss Road and are primarily concentrated in the northwestern vicinity of the PSA.

## 5.2 Aquatic Resources Delineation Results

Ten aquatic resource types were documented in the PSA and are described in further detail below: freshwater emergent pond, seasonal wetland, vernal pool, ditch, ephemeral drainage, intermittent drainage, perennial drainage, seasonal wetland swale, and upland swale. Figure 5-1 through Figure 5-6).

### 5.2.1 Wetlands

#### 5.2.1.1 Freshwater Emergent Wetland

One freshwater emergent wetland comprising approximately 0.02 acres occurs in the southwest corner of the PSA artificially created by a broken bubbler sprinkler located on an adjacent property (see Photo 1 in Appendix B, Photo Record). This feature entirely occurs within the adjacent other lands within the PSA. This feature was saturated at the time of the field survey and supported emergent hydrophytic vegetation dominated by broadleaf cattail (*Typha latifolia*; obligate [OBL]) and Baltic rush (*Juncus balticus*; facultative wetland [FACW]). The wetland contained hydric soils as indicated by redox features (Hydric Soil Indicator F6), and wetland hydrology was confirmed by the presence of oxidized rhizosphere along living roots (Hydrology Indicator C3) and saturation (Hydrology Indicator A3). This feature is clearly the result of artificial irrigation and would likely convert to upland vegetation if the leakage was fixed.

#### 5.2.1.2 Pond

There are three ponds comprising approximately 17.01 acres within the PSA, of which 0.37 acres occur in the solar development area and 16.64 acres occur in the adjacent other lands. These features are natural closed depressions that have been artificially augmented by a perennial water source, generally for the purpose of supporting livestock. Pond-01 located within the western portion of the PSA (see Photo 4 in Appendix B, Photo Record) appears to have been created by an overflowing cattle trough and contained surface water (Hydrology



Indicator A1) at the time of the October/November field delineation. Pond-02 located within the eastern portion of the PSA appears to have been artificially supplemented by a well in the past as evidenced by inundation visible on aerial imagery (Hydrology Indicator B7) but was dry at the time of the October/November fieldwork. These two ponds contained hydric soils as indicated by redox features (Hydric Soil Indicator F3).

Pond-03 is a large feature that occurs along the western boundary of the central portion of the PSA and continues outside of the PSA to the west. Although this feature is classified by the NWI as a freshwater emergent wetland (USFWS 2020), the area was dry during the October/November field delineation and was actively being graded by heavy machinery. Pond-03 had been artificially excavated and leveled to several feet lower than the surrounding topography, with the soil stockpiled along the western boundary. Furthermore, during the March site revisit, Pond-03 was completely inundated and at full capacity. The southeastern boundary of the feature was mapped according to the extent of stinkwort (*Dittrichia graveolens*; upland [UPL]) growing within the basin margin. Pond-03 was mostly barren of vegetation due to the heavy livestock grazing and recent maintenance activities (see Photo 5 in Appendix B, Photo Record). Hydric soils were also absent, but wetland hydrology was confirmed by the presence of surface soil cracks (Hydrology Indicator B6) and inundation visible on aerial imagery, as recently as June 2020 (Google Earth 2020) (Hydrology Indicator B7). The current hydrology of Pond-03 is unknown; however, the basin appears to receive seasonal flows from the main drainage complexes on site to the southeast and northeast and may receive overflow from the Cosumnes River, located approximately 0.4 to 0.6 miles to the west and north.

### 5.2.1.3 Seasonal Wetland

There are 51 seasonal wetlands comprising approximately 14.16 acres throughout the PSA, of which 3.10 acres occur in the solar development area and 11.06 acres occur in the adjacent other lands. These features only appear to be inundated seasonally, and some are connected via seasonal wetland swales, ephemeral drainages, and/or intermittent drainages. Seasonal wetlands were characterized by a distinct change in vegetation type and cover from the surrounding grassland (see Photos 2 and 3 in Appendix B, Photo Record). The seasonal wetlands contain a dominance of facultative (FAC) grasses, including perennial rye grass (*Festuca perennis*) and mouse barley (*Hordeum marinum*). The wetlands contained hydric soils as indicated by depleted matrix, redox dark surface, and redox depressions (Hydric Soil Indicators F3, F6, and F8). Wetland hydrology was confirmed by the presence of oxidized rhizospheres along living roots, surface soil cracks, and/or saturation visible on aerial imagery (Hydrology Indicators C3, B6, and C9). Small mammal burrows were observed within several of the features, indicating that these features remained dry for a long enough period for subterranean animals to inhabit them. No surface water or saturation was present in the seasonal wetlands during the October/November 2020 fieldwork.

The seasonal wetland (i.e., SW-24) that is located downslope from a large linear agricultural irrigation system may have been artificially augmented by the irrigation system; however, it is still located within a natural depression within the landscape and further exhibits natural drainage patterns. This feature therefore meets the classification of an artificial irrigated wetland (i.e., “leaky ditch wetland”) because it would likely retain wetland parameters (i.e., hydrophytic vegetation, hydric soil, and hydrologic indicators) if the agricultural irrigation operations were to cease. This feature does not meet the criteria to be classified as a “prior converted cropland.”

### 5.2.1.4 Vernal Pool

There are 17 vernal pools comprising approximately 6.30 acres within the PSA, of which 0.25 acres occur in the solar development area and 6.04 acres occur in the adjacent other lands. These features were characterized as

three-parameter wetlands with an impermeable layer such as a hard pan that may fill and empty several times during the rainy season. These features may be isolated or connected to larger vernal complexes via swales. The vernal pools on site exhibited concentric rings of distinctly different vegetation cover and species composition (see Photo 6 in Appendix B, Photo Record), the center of which was generally devoid of vegetation due to prolonged inundation and surrounded by a predominance of hydrophytic species such as Great Valley eryngo (*Eryngium castrense*; OBL), prostrate knotweed (*Polygonum aviculare*; FACW), turkey tangle fog fruit (*Phyla nodiflora*; FACW), and bracted popcorn flower (*Plagiobothrys bracteatus*; FACW), as well as facultative grasses growing along the feature margins. The vernal pools contained hydric soils as indicated by depleted matrix, redox dark surface, and redox depressions (Hydric Soil Indicators F3, F6, and F8). Wetland hydrology was confirmed by the presence of oxidized rhizospheres along living roots and surface soil cracks (Hydrology Indicators C3 and B6). No surface water or saturation was present in the vernal pools during the October/November 2020 fieldwork. Inundation was visible on aerial imagery during wet years (i.e., 2006, 2011) (Google Earth 2020) (Hydrology Indicator B7), and cow punches and evidence of grazing were documented in most of the vernal pools on site.

## 5.2.2 Non-Wetland Waters

### 5.2.2.1 Ditch

There are four ditches comprising approximately 1.93 acres (5,105.55 linear feet) throughout the PSA, of which 0.15 acre (720.26 linear feet) is within the solar development area, and 1.78 acres (4,385.29 linear feet) are within the adjacent other lands of the PSA. The earthen ditches are human-made features with intermittent hydrology intended for stormwater, agricultural, irrigation, runoff, or similar purposes. Evidence of an OHWM within the ditches includes a break in slope, bed and bank, and change in plant community, and deposition within Ditch-02. Ditch-01 supports emergent vegetation along the bank margins, including perennial rye grass, mouse barley, soft rush (*Juncus effusus*; FACW), and Valley oak and Goodding's willow saplings. Ditch-02 supports upland vegetation along the banks including fennel (*Foeniculum vulgare*; UPL) and perennial pepperweed (*Lepidium latifolium*; UPL) (see Photo 7 in Appendix B, Photo Record). Ditch-01 continues north at the southeastern corner of the PSA, but the bed and bank dissipate along the eastern boundary. The current use of Ditch-01 is unclear, and parts of the feature were being used as a livestock pen at the time of the fieldwork. Ditches 03 and D-04 are connected hydrologically via culverts and run parallel on the east and west sides of Dillard Road at the existing solar facility within the PSA. Dominant species present within the drainages D-03 and D-04 include ripgut brome (*Bromus diandrus*), wild oats (*Avena fatua*), and Medusa head (*Elymus caput-medusae*), all of which are not listed with indicators by the USACE. Although inundation is visible on aerial imagery (Hydrology Indicator B7) (Google Earth 2020), all ditches were dry during the October/November and March field delineation. There is no continuous riparian corridor associated with the features in the PSA.

### 5.2.2.2 Ephemeral Drainage

There are four ephemeral drainages comprising approximately 1.11 acres (3,431.84 linear feet) within the PSA, of which 0.74 acres (2,439.08 linear feet) occur in the solar development area and 0.37 acres (992.76 linear feet) occur in the adjacent other lands. Ephemeral drainages on site consist of stream channels that are naturally occurring rather than anthropogenically created, and contain flowing water during, and for a short duration after, precipitation events. Hydrology of the ephemeral drainages is dependent on inputs during rain events and runoff from the surrounding uplands, with evidence of OHWM including shelving, a break in slope, sediment sorting, bed and bank, bent vegetation, and/or a change in plant community and cover (see Photo 8 in Appendix B, Photo

Record). Where vegetation was present, the ephemeral drainages contained a dominance of hydrophytic species like those described for seasonal wetlands and vernal pools. These drainages flow in a southwesterly direction and terminate into Pond-03 via culverts. These drainages were dry at the time of the October/November 2020 fieldwork. There are no continuous riparian corridors associated with these features in the PSA.

### 5.2.2.3 Intermittent Drainage

One intermittent drainage comprising approximately 2.36 acres (4,462.81 linear feet) within the PSA, of which 0.46 acres (1,303.60 linear feet) occur in the solar development area and 1.91 acres (3,159.21 linear feet) occur in the adjacent other lands. Intermittent drainages generally have flowing water during certain times of the year, when groundwater provides water for stream flow, and receive supplemental water from rainfall runoff. The intermittent drainage on site appears to receive water via a culvert from a basin complex located north of the PSA. Evidence of an OHWM and presence of hydrophytic vegetation is like that described for ephemeral drainages above (see Photo 9 in Appendix B, Photo Record); however, the feature exhibits a mild break in slope and lacks a defined bed and bank in places. The drainage receives water from two adjacent seasonal wetland swales, contains three seasonal wetlands within low points or widenings, and terminates into Pond-03. Although inundation is visible on aerial imagery, this drainage was dry at the time of the October/November fieldwork.

### 5.2.2.4 Perennial Drainage (Cosumnes River)

The northwestern portion of the PSA contains 24.10 acres (4,506.29 linear feet) of the Cosumnes River and its associated riparian corridor (previously described in Section 5.1.4). This feature entirely occurs within the adjacent other lands within the PSA. The Cosumnes River is a known jurisdictional water with perennial flows that originates in the Sierra Nevada mountains and flows approximately 50 miles into the Central Valley, emptying into the Mokelumne River in the Sacramento San Joaquin Delta. The riverbed consists of granite slabs and unconsolidated sand beaches. The OHWM of the river was mapped based on the presence of wracking, sediment sorting, shelving, and a change in vegetation type and cover. The top of bank (TOB) was delineated using 2-foot-wide topographic contours, and the extent of riparian woodland, where present beyond TOB, was mapped to the dripline of riparian vegetation. The river contained flowing water at an estimated depth of 10 feet during the October/November fieldwork (see Photo 10 in Appendix B, Photo Record).

### 5.2.2.5 Seasonal Wetland Swale

There are 15 seasonal wetland swales comprising approximately 2.15 acres (8,807.17 linear feet) within the PSA, of which 3.10 acres occur in the solar development area and 11.06 acres occur in the adjacent other lands. Seasonal wetland swales on site consist of topographic depressions that would be expected to convey water when inundated, but where a defined bed and bank and typical fluvial indicators are lacking (see Photo 11 in Appendix B, Photo Record). These features were generally delineated by a mild break in slope and change in vegetation type and cover. These features were dominated by facultative wetland grasses like those described for seasonal wetlands above. All swales on site were dry at the time of the October/ November 2020 fieldwork.

### 5.2.2.6 Upland Swale

There are seven upland swales comprising approximately 0.62 acres (1,837.54 linear feet) within the PSA, of which 0.08 acres (923.59 linear feet) occur in the solar development area and 816 linear feet 0.54 acres (811.44 linear



feet) occur in the adjacent other lands. Upland swales on site consisted of linear topographic depressions that lack a distinct OHWM. These features contain a mild break in slope and a slight change in vegetation type and cover but did not support a dominance of wetland vegetation (see Photo 12 in Appendix B, Photo Record). These features contained upland grasses and facultative wetland grasses, like those described for annual grassland and seasonal wetlands above.

### 5.3 Sample Point and Transect Summary

Results from observable field indicators from 191 wetland data points and 48 stream transects indicate that approximately 69.77 acres of aquatic resources occur on the PSA (Figure 5-1 through Figure 5-6). The data collected at each data point and transect are included in Appendix E and summarized in Tables 4, Wetland Data Point Summary and Table 5, Ordinary High-Water Mark Transect Data Summary.

**Table 4. Wetland Data Point Summary**

| Data Point | Wetland Determination Field Indicators |       |           | Location (Decimal Degrees- Latitude, Longitude) | Determination |
|------------|----------------------------------------|-------|-----------|-------------------------------------------------|---------------|
|            | Vegetation                             | Soils | Hydrology |                                                 |               |
| 1          | Yes                                    | Yes   | Yes       | 38.4754186330251°, -121.174582691202°           | SW-01         |
| 2          | No                                     | No    | No        | 38.4754050524633°, -121.174569176893°           | UPL           |
| 3          | Yes                                    | Yes   | Yes       | 38.475237565099°, -121.174708853176°            | SW-03         |
| 4          | No                                     | No    | Yes       | 38.4752404366534°, -121.1746519864°             | UPL           |
| 5          | Yes                                    | Yes   | Yes       | 38.474893079189°, -121.174905695509°            | SWS-01        |
| 6          | No                                     | Yes   | Yes       | 38.4749486294873°, -121.174546480288°           | UPL           |
| 7          | Yes                                    | Yes   | Yes       | 38.4745082419188°, -121.174441771786°           | SW-06         |
| 8          | Yes                                    | Yes   | Yes       | 38.4744477842912°, -121.175323476041°           | SW-07         |
| 9          | Yes                                    | Yes   | Yes       | 38.4742124014539°, -121.174704963506°           | SW-08         |
| 10         | Yes                                    | Yes   | Yes       | 38.4743603501743°, -121.174846266603°           | SW-10         |
| 11         | Yes                                    | Yes   | Yes       | 38.474049421772°, -121.174525706327°            | SW-11         |
| 12         | No                                     | Yes   | Yes       | 38.4740419661238°, -121.174540771055°           | UPL           |
| 13         | Yes                                    | Yes   | Yes       | 38.4741080655637°, -121.173213779399°           | VP-01         |
| 14         | Yes                                    | Yes   | Yes       | 38.4740117895045°, -121.174267368256°           | VP-10         |
| 15         | No                                     | No    | Yes       | 38.474037523437°, -121.174223864429°            | UPL           |
| 16         | Yes                                    | Yes   | Yes       | 38.4738362355615°, -121.173920497178            | SW-12         |
| 17         | Yes                                    | Yes   | Yes       | 38.4738083030622°, -121.173991677677°           | SW-13         |
| 18         | No                                     | No    | Yes       | 38.4737935681052°, -121.174040415381°           | UPL           |
| 19         | Yes                                    | Yes   | Yes       | 38.473330689436°, -121.172476677056°            | VP-02         |
| 20         | Yes                                    | Yes   | Yes       | 38.4732657114305°, -121.172720604998°           | SW-14         |
| 21         | Yes                                    | Yes   | Yes       | 38.4730223002372°, -121.172814557955°           | VP-03         |
| 22         | No                                     | Yes   | Yes       | 38.4730330393976°, -121.172952837421°           | UPL           |
| 23         | Yes                                    | Yes   | Yes       | 38.4726831482453°, -121.173109249477°           | SW-15         |
| 24         | Yes                                    | Yes   | Yes       | 38.4730470471802°, -121.174092386152°           | SW-16         |
| 25         | Yes                                    | Yes   | Yes       | 38.4734797041551°, -121.174092281208°           | SW-17         |
| 26         | No                                     | No    | Yes       | 38.4735135381858°, -121.17415697019°            | UPL           |

**Table 4. Wetland Data Point Summary**

| Data Point | Wetland Determination Field Indicators |       |           | Location (Decimal Degrees- Latitude, Longitude) | Determination |
|------------|----------------------------------------|-------|-----------|-------------------------------------------------|---------------|
|            | Vegetation                             | Soils | Hydrology |                                                 |               |
| 27         | Yes                                    | Yes   | Yes       | 38.4720898213128°, -121.173110506072°           | SW-18         |
| 28         | No                                     | Yes   | Yes       | 38.4720419991565°, -121.17307064834°            | UPL           |
| 29         | Yes                                    | Yes   | Yes       | 38.4723086659755°, -121.173493276561°           | SW-19         |
| 30         | No                                     | Yes   | Yes       | 38.4722573687167°, -121.173484360521°           | UPL           |
| 31         | No                                     | Yes   | No        | 38.4693780269174°, -121.174492672561°           | UPL           |
| 32         | No                                     | No    | Yes       | 38.4751448504266°, -121.172981898848°           | UPL           |
| 33         | Yes                                    | Yes   | Yes       | 38.47552312777°, -121.174324415367°             | SW-02         |
| 34         | No                                     | No    | No        | 38.4755036437444°, -121.174275372976°           | UPL           |
| 35         | Yes                                    | Yes   | Yes       | 38.4746666326274°, -121.174970523533°           | SW-04         |
| 36         | No                                     | No    | No        | 38.4746352886514°, -121.174985155968°           | UPL           |
| 37         | No                                     | Yes   | Yes       | 38.4748923075593°, -121.174879884115°           | UPL           |
| 38         | Yes                                    | Yes   | Yes       | 38.4750226585163°, -121.174582124087°           | SW-05         |
| 39         | No                                     | No    | No        | 38.4745442734361°, -121.174375814772°           | UPL           |
| 40         | No                                     | No    | No        | 38.4744274121078°, -121.175377320373°           | UPL           |
| 41         | No                                     | Yes   | Yes       | 38.4741717637339°, -121.174681627642°           | UPL           |
| 42         | Yes                                    | Yes   | Yes       | 38.4745501186631°, -121.174795733759°           | SW-09         |
| 43         | No                                     | Yes   | Yes       | 38.4745807500367°, -121.17475422692°            | UPL           |
| 44         | No                                     | Yes   | Yes       | 38.4743922042641°, -121.174811091357°           | UPL           |
| 45         | Yes                                    | Yes   | Yes       | 38.4741373569424°, -121.172928359906°           | VP-01         |
| 46         | No                                     | No    | No        | 38.4740867003515°, -121.17357476201°            | UPL           |
| 47         | No                                     | No    | Yes       | 38.4738922814085°, -121.173884640916°           | UPL           |
| 48         | No                                     | No    | Yes       | 38.473311993568°, -121.172543258261°            | UPL           |
| 49         | No                                     | No    | Yes       | 38.4732017363579°, -121.172729060798°           | UPL           |
| 50         | No                                     | Yes   | Yes       | 38.4729875632962°, -121.172849661369°           | UPL           |
| 51         | Yes                                    | Yes   | Yes       | 38.4730255415773°, -121.173014239268°           | VP-04         |
| 52         | No                                     | Yes   | No        | 38.4726118476465°, -121.173080912361°           | UPL           |
| 53         | No                                     | No    | Yes       | 38.4729231647314°, -121.17407326579°            | UPL           |
| 54         | No                                     | Yes   | Yes       | 38.4732422017183°, -121.172183962375°           | UPL           |
| 55         | Yes                                    | Yes   | Yes       | 38.4751868777436°, -121.173043020309°           | SW-20         |
| 56         | Yes                                    | Yes   | Yes       | 38.4685419773286°, -121.17501438415°            | SW-21         |
| 57         | No                                     | Yes   | Yes       | 38.4687873084898°, -121.175463876799°           | UPL           |
| 58         | No                                     | Yes   | Yes       | 38.468890684568°, -121.176691671627°            | UPL           |
| 59         | No                                     | Yes   | Yes       | 38.46792084319°, -121.176086063914°             | UPL           |
| 60         | No                                     | Yes   | Yes       | 38.4686856949598°, -121.176250252023°           | UPL           |
| 61         | No                                     | No    | No        | 38.4676270252347°, -121.176476181084°           | UPL           |
| 66         | No                                     | No    | Yes       | 38.4734718976133°, -121.176220391057°           | UPL           |
| 67         | Yes                                    | Yes   | Yes       | 38.4732869632782°, -121.175974427288°           | SW-26         |
| 68         | No                                     | No    | Yes       | 38.4732715895606°, -121.175925837094°           | UPL           |
| 69         | No                                     | No    | No        | 38.4727056253697°, -121.175737659115°           | UPL           |

**Table 4. Wetland Data Point Summary**

| Data Point | Wetland Determination Field Indicators |       |           | Location (Decimal Degrees- Latitude, Longitude) | Determination |
|------------|----------------------------------------|-------|-----------|-------------------------------------------------|---------------|
|            | Vegetation                             | Soils | Hydrology |                                                 |               |
| 70         | No                                     | Yes   | Yes       | 38.4771662777409°, -121.176513594024°           | UPL           |
| 72         | No                                     | Yes   | Yes       | 38.4685789780434°, -121.175074969026°           | UPL           |
| 73         | Yes                                    | Yes   | Yes       | 38.4679455471973°, -121.176199810475°           | VP-11         |
| 74         | Yes                                    | Yes   | Yes       | 38.4676051352642°, -121.176340462636°           | SW-23         |
| 77         | Yes                                    | Yes   | Yes       | 38.4725695249179°, -121.179606495101°           | SW-24         |
| 78         | No                                     | Yes   | No        | 38.47272807375°, -121.179349804986°             | UPL           |
| 79         | Yes                                    | Yes   | Yes       | 38.473460359364°, -121.176163225498°            | SW-25         |
| 80         | Yes                                    | Yes   | Yes       | 38.4727755476728°, -121.175825493726°           | SW-27         |
| 81         | Yes                                    | Yes   | Yes       | 38.4771516297374°, -121.176408253869°           | SW-28         |
| 84         | Yes                                    | Yes   | Yes       | 38.4789010347267°, -121.180817281716°           | SW-29         |
| 85         | No                                     | No    | No        | 38.4789885910486°, -121.180826377143°           | UPL           |
| 86         | No                                     | Yes   | Yes       | 38.4789733839293°, -121.183347257577°           | UPL           |
| 88         | No                                     | No    | Yes       | 38.4758356379272°, -121.183535512484°           | UPL           |
| 89         | Yes                                    | Yes   | Yes       | 38.4755511491054°, -121.18251232532°            | SW-32         |
| 91         | No                                     | Yes   | Yes       | 38.4728665747574°, -121.186535247721°           | UPL           |
| 92         | Yes                                    | Yes   | Yes       | 38.4787520712829°, -121.183179425309°           | SW-30         |
| 93         | Yes                                    | Yes   | Yes       | 38.4748166763795°, -121.18731122361°            | SW-31         |
| 94         | No                                     | Yes   | Yes       | 38.4750690657118°, -121.187441134049°           | UPL           |
| 95         | No                                     | Yes   | Yes       | 38.4777159419566°, -121.180226396201°           | UPL           |
| 97         | No                                     | No    | Yes       | 38.4757294349405°, -121.182404715255°           | UPL           |
| 98         | Yes                                    | Yes   | Yes       | 38.4729320693629°, -121.185973994996°           | SW-33         |
| 99         | No                                     | Yes   | Yes       | 38.4729933571597°, -121.185992559927°           | UPL           |
| 100        | Yes                                    | Yes   | Yes       | 38.472847624572°, -121.186516134945°            | SW-34         |
| 104        | No                                     | No    | No        | 38.4844449098275°, -121.188606771734°           | UPL           |
| 105        | Yes                                    | No    | No        | 38.4815555935982°, -121.188480470668°           | UPL           |
| 107        | Yes                                    | No    | No        | 38.4810897190523°, -121.189209221109°           | UPL           |
| 108        | Yes                                    | No    | No        | 38.4809830929115°, -121.189050624304°           | UPL           |
| 109        | No                                     | No    | No        | 38.4796801407079°, -121.189536944272°           | UPL           |
| 110        | No                                     | No    | No        | 38.4793320688604°, -121.190244552556°           | UPL           |
| 111        | No                                     | No    | No        | 38.4818566032021°, -121.195232621515°           | UPL           |
| 112        | Yes                                    | No    | No        | 38.4818383545167°, -121.18911404716°            | UPL           |
| 113        | Yes                                    | No    | No        | 38.4817925618439°, -121.188940548153°           | UPL           |
| 114        | Yes                                    | No    | No        | 38.4812876663448°, -121.188633037916°           | UPL           |
| 115        | Yes                                    | No    | No        | 38.4811803201695°, -121.189098785624°           | UPL           |
| 116        | Yes                                    | Yes   | Yes       | 38.4793083718446°, -121.189641253159°           | VP-05         |
| 117        | Yes                                    | Yes   | Yes       | 38.4795082889358°, -121.189469640125°           | VP-05         |
| 119        | Yes                                    | Yes   | Yes       | 38.4793960093755°, -121.190237940171°           | SWS-02        |
| 121        | Yes                                    | Yes   | Yes       | 38.4715608837399°, -121.183968791674°           | VP-06         |
| 122        | No                                     | Yes   | Yes       | 38.4715326446474°, -121.183911777101°           | UPL           |



**Table 4. Wetland Data Point Summary**

| Data Point | Wetland Determination Field Indicators |       |           | Location (Decimal Degrees- Latitude, Longitude) | Determination |
|------------|----------------------------------------|-------|-----------|-------------------------------------------------|---------------|
|            | Vegetation                             | Soils | Hydrology |                                                 |               |
| 123        | No                                     | Yes   | Yes       | 38.4738392962745°, -121.187626459924°           | UPL           |
| 124        | No                                     | No    | Yes       | 38.4737167026333°, -121.188974273633°           | P-03          |
| 125        | No                                     | No    | No        | 38.4694834943683°, -121.192941316571°           | UPL           |
| 126        | Yes                                    | Yes   | Yes       | 38.4717177517749°, -121.18622070992°            | SW-36         |
| 127        | No                                     | No    | No        | 38.4716973319614°, -121.186285397499°           | UPL           |
| 128        | No                                     | No    | No        | 38.4722160509849°, -121.188501627453°           | UPL           |
| 129        | Yes                                    | Yes   | Yes       | 38.4732164369024°, -121.186846579105°           | SW-35         |
| 130        | No                                     | Yes   | Yes       | 38.4732601810485°, -121.18681341408°            | UPL           |
| 132        | Yes                                    | Yes   | Yes       | 38.4739574471587°, -121.187628114375°           | VP-17         |
| 133        | No                                     | No    | No        | 38.4738330763322°, -121.189187759512°           | UPL           |
| 134        | No                                     | Yes   | Yes       | 38.4696303136681°, -121.192574462914°           | P-03          |
| 135        | Yes                                    | Yes   | Yes       | 38.4721280234723°, -121.18883952129°            | SW-37         |
| 136        | Yes                                    | Yes   | Yes       | 38.4818975956699°, -121.185559615503°           | P-01          |
| 140        | No                                     | Yes   | Yes       | 38.4794220916123°, -121.184444880862°           | UPL           |
| 141        | Yes                                    | Yes   | Yes       | 38.4829599683616°, -121.18661720739°            | SW-42         |
| 142        | No                                     | No    | No        | 38.4829770443251°, -121.186447670987°           | UPL           |
| 144        | No                                     | Yes   | Yes       | 38.469919524289°, -121.190057601015°            | UPL           |
| 145        | No                                     | Yes   | Yes       | 38.4670431089579°, -121.191426078209°           | UPL           |
| 146        | No                                     | No    | No        | 38.4677772338734°, -121.184865824089°           | UPL           |
| 147        | Yes                                    | No    | Yes       | 38.4676220463563°, -121.181371613342°           | UPL           |
| 148        | No                                     | No    | No        | 38.4671105398136°, -121.180112232038°           | UPL           |
| 149        | No                                     | No    | No        | 38.4673061233908°, -121.179722950071°           | UPL           |
| 150        | No                                     | No    | No        | 38.4675218284219°, -121.179691557342°           | UPL           |
| 153        | No                                     | No    | No        | 38.4710738315656°, -121.18778792531°            | UPL           |
| 157        | No                                     | No    | Yes       | 38.46944444449781°, -121.184175155954°          | UPL           |
| 158        | Yes                                    | No    | Yes       | 38.4697707214354°, -121.188502035091°           | UPL           |
| 159        | Yes                                    | Yes   | Yes       | 38.4669962842438°, -121.191331496242°           | FEW-01        |
| 162        | Yes                                    | Yes   | Yes       | 38.467938859189°, -121.179399213175°            | SW-41         |
| 163        | No                                     | No    | No        | 38.4673127158382°, -121.180791247825°           | UPL           |
| 164        | Yes                                    | Yes   | Yes       | 38.4665150337717°, -121.180142042307°           | VP-07         |
| 165        | No                                     | No    | No        | 38.4653026030878°, -121.180981170762°           | UPL           |
| 167        | Yes                                    | No    | No        | 38.4818147385911°, -121.185608531213°           | UPL           |
| 169        | Yes                                    | Yes   | Yes       | 38.4794241328718°, -121.184553153748°           | SW-38         |
| 170        | Yes                                    | Yes   | Yes       | 38.4765900880856°, -121.18976822515°            | SW-39         |
| 171        | No                                     | Yes   | No        | 38.4764920389335°, -121.189907263852°           | UPL           |
| 173        | Yes                                    | Yes   | Yes       | 38.4805809381802°, -121.18934132707°            | SW-40         |
| 174        | No                                     | No    | No        | 38.4805877615914°, -121.189272699549°           | UPL           |
| 178        | No                                     | No    | No        | 38.467934669069°, -121.179433993263°            | UPL           |
| 179        | No                                     | No    | Yes       | 38.4667457331482°, -121.180119575357°           | UPL           |

**Table 4. Wetland Data Point Summary**

| Data Point | Wetland Determination Field Indicators |       |           | Location (Decimal Degrees- Latitude, Longitude) | Determination |
|------------|----------------------------------------|-------|-----------|-------------------------------------------------|---------------|
|            | Vegetation                             | Soils | Hydrology |                                                 |               |
| 180        | No                                     | No    | No        | 38.4664791963311°, -121.180176241714°           | UPL           |
| 181        | Yes                                    | Yes   | Yes       | 38.4656538063714°, -121.180738078509°           | P-02          |
| 182        | No                                     | No    | No        | 38.4657416646798°, -121.18078444232°            | UPL           |
| 183        | Yes                                    | Yes   | Yes       | 38.4653113299874°, -121.180883995783°           | VP-08         |
| 184        | No                                     | No    | No        | 38.4660261678264°, -121.188860063156°           | UPL           |
| 185        | No                                     | No    | No        | 38.4688182280994°, -121.189891482911°           | UPL           |
| 186        | No                                     | No    | No        | 38.4695545339622°, -121.189352483936°           | UPL           |
| 187        | No                                     | No    | No        | 38.4672129134211°, -121.186959540503°           | UPL           |
| 188        | No                                     | No    | No        | 38.4655454606685°, -121.181473681963°           | UPL           |
| 189        | No                                     | No    | No        | 38.4655373059945°, -121.181828513225°           | UPL           |
| 191        | No                                     | No    | No        | 38.4652011479536°, -121.182415726891°           | UPL           |
| 192        | Yes                                    | Yes   | Yes       | 38.4650224179196°, -121.182527261114°           | SW-43         |
| 193        | No                                     | No    | No        | 38.4649072192596°, -121.18241428563°            | UPL           |
| 194        | No                                     | No    | No        | 38.4648962756889°, -121.182855457738°           | UPL           |
| 195        | Yes                                    | Yes   | Yes       | 38.4649903978914°, -121.183504175067°           | VP-09         |
| 196        | No                                     | No    | No        | 38.464934260962°, -121.183626012917°            | UPL           |
| 197        | Yes                                    | Yes   | Yes       | 38.4654947910337°, -121.184509305362°           | VP-12         |
| 198        | Yes                                    | Yes   | Yes       | 38.4654697875945°, -121.18487302544°            | VP-13         |
| 199        | Yes                                    | Yes   | Yes       | 38.4657079981602°, -121.185252854859°           | SW-45         |
| 200        | No                                     | No    | No        | 38.4657036366469°, -121.185205542564°           | UPL           |
| 201        | No                                     | No    | No        | 38.4644624842111°, -121.186408276864°           | UPL           |
| 203        | Yes                                    | Yes   | Yes       | 38.4639771231389°, -121.18577776046°            | SW-46         |
| 204        | Yes                                    | Yes   | Yes       | 38.4629713877053°, -121.184229430207°           | SW-47         |
| 205        | Yes                                    | Yes   | Yes       | 38.4628324638786°, -121.182959273176°           | VP-14         |
| 206        | No                                     | No    | No        | 38.4628562771348°, -121.182876078204°           | UPL           |
| 207        | Yes                                    | Yes   | Yes       | 38.462607315835°, -121.182299575585°            | VP-15         |
| 208        | No                                     | No    | No        | 38.4626160636474°, -121.182396474551°           | UPL           |
| 210        | No                                     | No    | No        | 38.4629248607282°, -121.182201625595°           | UPL           |
| 215        | No                                     | No    | No        | 38.4649974381241°, -121.182579233051°           | UPL           |
| 216        | Yes                                    | Yes   | Yes       | 38.4648828006594°, -121.182885152626°           | SW-44         |
| 217        | No                                     | No    | No        | 38.4649416265469°, -121.183508879354°           | UPL           |
| 219        | No                                     | No    | No        | 38.4655741598836°, -121.184498282397°           | UPL           |
| 221        | No                                     | No    | No        | 38.4654380481585°, -121.185485940467°           | UPL           |
| 222        | No                                     | No    | No        | 38.4640078021666°, -121.185727251742°           | UPL           |
| 223        | No                                     | No    | No        | 38.4630234148572°, -121.184209261648°           | UPL           |
| 224        | Yes                                    | Yes   | Yes       | 38.4629158605681°, -121.184076282211°           | SW-48         |
| 225        | No                                     | No    | No        | 38.4629534506059°, -121.184085613293°           | UPL           |
| 226        | Yes                                    | Yes   | Yes       | 38.463057702934°, -121.183791722231°            | SW-49         |
| 227        | No                                     | No    | No        | 38.4630775073222°, -121.183779019976°           | UPL           |

**Table 4. Wetland Data Point Summary**

| Data Point | Wetland Determination Field Indicators |       |           | Location (Decimal Degrees- Latitude, Longitude) | Determination |
|------------|----------------------------------------|-------|-----------|-------------------------------------------------|---------------|
|            | Vegetation                             | Soils | Hydrology |                                                 |               |
| 228        | No                                     | No    | No        | 38.462796218187 °, -121.183506470533 °          | UPL           |
| 229        | Yes                                    | Yes   | Yes       | 38.4627559701428 °, -121.183588421845 °         | SW-50         |
| 232        | Yes                                    | Yes   | Yes       | 38.4623042126993 °, -121.18255497066 °          | VP-16         |
| 233        | No                                     | No    | No        | 38.4623174211855 °, -121.182703911475 °         | UPL           |
| 234        | No                                     | No    | No        | 38.4669541246933 °, -121.185454455427 °         | UPL           |
| 235        | Yes                                    | Yes   | Yes       | 38.4628868135543 °, -121.182034775321 °         | SW-51         |
| 238        | No                                     | No    | No        | 38.4655222807824 °, -121.184859264874 °         | UPL           |
| 239        | No                                     | No    | No        | 38.482131740835 °, -121.190591459094 °          | UPL           |
| 242        | No                                     | Yes   | Yes       | 38.467164000000 °, -121.175458000000 °          | UPL           |

Notes: FEW = Freshwater Emergent Wetland; P = Pond; SW = Seasonal Wetland; SWS = Seasonal Wetland Swale; VP = Vernal Pool; UPL = Upland.

**Table 5. Ordinary High Water Mark (OHWM) Transect Data Summary**

| Transect | Ordinary High Water Mark Field Indicators                                                                        | Location (Decimal Degrees- Latitude, Longitude) | Determination |
|----------|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|---------------|
| 62       | Break in slope, sediment sorting, change in vegetation type and cover                                            | 38.4711222996087 °, -121.180712350823 °         | ED-01         |
| 63       | Break in slope                                                                                                   | 38.4717468817076 °, -121.183269808023 °         | US-08         |
| 64       | Break in slope, bed and bank, vegetation absent, change in vegetation type and cover                             | 38.4726116441812 °, -121.183036505017 °         | ED-02         |
| 65       | Break in slope, shelving, vegetation absent, sediment sorting, bed and bank, change in vegetation type and cover | 38.472548011011 °, -121.18341795307 °           | ED-02         |
| 71       | Break in slope, sediment sorting, bed and bank, change in vegetation type and cover                              | 38.4788915743784 °, -121.179367515066 °         | ID-01         |
| 75       | Break in slope, changes in the character of soil, change in vegetation type and cover                            | 38.4718766602892 °, -121.182416604915 °         | ED-01         |
| 76       | Break in slope                                                                                                   | 38.4718907955284 °, -121.183440964625 °         | US-08         |
| 82       | Break in slope, vegetation absent, change in vegetation type and cover                                           | 38.4787854393673 °, -121.179638345901 °         | ID-01         |
| 83       | Break in slope, change in vegetation type and cover                                                              | 38.4774629145397 °, -121.184317565129 °         | ID-01         |



**Table 5. Ordinary High Water Mark (OHWM) Transect Data Summary**

| Transect | Ordinary High Water Mark Field Indicators                                                                                  | Location (Decimal Degrees- Latitude, Longitude) | Determination |
|----------|----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|---------------|
| 87       | Break in slope, vegetation absent, change in vegetation type and cover                                                     | 38.4786470749703°, -121.183430586943°           | ID-01         |
| 90       | Break in slope, vegetation absent, change in vegetation type and cover                                                     | 38.4729126999338°, -121.186432057383°           | SWS-10        |
| 96       | Break in slope, change in vegetation type and cover                                                                        | 38.4786607448627°, -121.1817576165°             | SWS-09        |
| 101      | Vegetation absent, change in vegetation type and cover                                                                     | 38.4736007563825°, -121.187663243601°           | SWS-12        |
| 102      | Break in slope, shelving, vegetation absent, bed and bank, change in vegetation type and cover                             | 38.4736365324559°, -121.187853349931°           | ED-05         |
| 103      | Break in slope, deposition, bed and bank, change in vegetation type and cover                                              | 38.4824421265404°, -121.190335730554°           | D-02          |
| 106      | Break in slope, presence of litter or debris, vegetation matted down, bent, or absent, change in vegetation type and cover | 38.4853197417076°, -121.192847063307°           | US-01         |
| 118      | Break in slope, change in vegetation type and cover                                                                        | 38.4801394168521°, -121.189132045761°           | ED-03         |
| 131      | Vegetation absent, change in vegetation type and cover                                                                     | 38.4735860359244°, -121.187675629837°           | SWS-12        |
| 137      | Break in slope, destruction of terrestrial vegetation, bed and bank                                                        | 38.4820478383632°, -121.185789855537°           | ED-04         |
| 138      | Break in slope, change in vegetation type and cover                                                                        | 38.4792123985238°, -121.1812501623°             | SWS-13        |
| 139      | Break in slope, change in vegetation type and cover                                                                        | 38.4796271992612°, -121.183160998035°           | SWS-14        |
| 143      | Break in slope, destruction of terrestrial vegetation, sediment sorting, change in vegetation type and cover               | 38.4691117652754°, -121.186198580221°           | SWS-04        |
| 151      | Break in slope, vegetation matted down, bent, or absent, change in vegetation type and cover                               | 38.4716860671304°, -121.188364503228°           | SWS-04        |
| 152      | Break in slope, vegetation matted down, bent, or                                                                           | 38.4708848369787°, -121.18809598174°            | SWS-04        |

**Table 5. Ordinary High Water Mark (OHWM) Transect Data Summary**

| Transect | Ordinary High Water Mark Field Indicators                                                                                                                             | Location (Decimal Degrees- Latitude, Longitude) | Determination |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|---------------|
|          | absent, change in vegetation type and cover                                                                                                                           |                                                 |               |
| 154      | Break in slope, change in vegetation type and cover                                                                                                                   | 38.4702770207622°, -121.187556822786°           | SWS-04        |
| 155      | None                                                                                                                                                                  | 38.4695022994675°, -121.186631657878°           | n/a           |
| 156      | Break in slope, change in vegetation type and cover                                                                                                                   | 38.4683080015377°, -121.183628614313°           | US-02         |
| 160      | Break in slope, changes in character of soil, vegetation matted down, bent, or absent, change in vegetation type and cover                                            | 38.46772422015°, -121.191773620143°             | SWS-05        |
| 161      | Break in slope, shelving, change in vegetation type and cover                                                                                                         | 38.4689715846277°, -121.192363192582°           | SWS-05        |
| 166      | Break in slope, change in vegetation type and cover                                                                                                                   | 38.46783979°, -121.1851799°                     | SWS-04        |
| 168      | Break in slope                                                                                                                                                        | 38.4820908415816°, -121.185785329753°           | US-06         |
| 172      | Break in slope, change in vegetation type and cover                                                                                                                   | 38.4815308714105°, -121.189240634886°           | SWS-03        |
| 176      | Vegetation absent, change in vegetation type and cover                                                                                                                | 38.4730517025577°, -121.186570174213°           | SWS-12        |
| 177      | Break in slope, change in vegetation type and cover                                                                                                                   | 38.4787636707561°, -121.184587604714°           | SWS-15        |
| 190      | Break in slope, change in vegetation type and cover                                                                                                                   | 38.4653899234487°, -121.181735945931°           | US-03         |
| 209      | Break in slope, vegetation absent, change in vegetation type and cover                                                                                                | 38.4625957787614°, -121.182958095258°           | SWS-07        |
| 211      | Break in slope, change in vegetation type and cover                                                                                                                   | 38.46335011°, -121.1826699°                     | US-05         |
| 212      | Break in slope, bed and bank, change in vegetation type and cover                                                                                                     | 38.4605962573021°, -121.179636592087°           | D-01          |
| 213      | Break in slope, bed and bank, change in vegetation type and cover                                                                                                     | 38.4606011739734°, -121.180035036217°           | D-01          |
| 214      | Break in slope, shelving, destruction of terrestrial vegetation, presence of litter and debris, vegetation matted down, bent, or absent, bed and bank, water staining | 38.4846172581689°, -121.188575564189°           | PD-01         |

**Table 5. Ordinary High Water Mark (OHWM) Transect Data Summary**

| Transect | Ordinary High Water Mark Field Indicators                                               | Location (Decimal Degrees- Latitude, Longitude)                             | Determination |
|----------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------|
| 218      | Break in slope, change in vegetation type and cover                                     | 38.465174871748°, -121.184152177485°                                        | SWS-06        |
| 220      |                                                                                         | 38.4643705498358°, -121.186308814787°                                       | SWS-06        |
| 231      | Break in slope, change in vegetation type and cover                                     | 38.4629695376119°, -121.18249916561;<br>38.463020000000°, -121.18300000000° | SWS-08        |
| 230      | Break in slope, change in vegetation type and cover                                     | 38.46302344°, -121.1832133°                                                 | US-04         |
| 236      | Break in slope, change in vegetation type and cover                                     | 38.467846623°, -121.186125648°                                              | US-07         |
| 237      | Break in slope, vegetation absent, change in vegetation type and cover                  | 38.473173376°, -121.18725627°                                               | SWS-11        |
| 240      | Break in slope, bed and bank, change in vegetation type and cover, drainage depressions | 38.466856°, -121.175812°                                                    | D-03          |
| 241      | Break in slope, bed and bank, change in vegetation type and cover, drainage depressions | 38.466998°, -121.175552°                                                    | D-04          |

**Notes:** D = Ditch; ED = Ephemeral Drainage; ID = Intermittent Drainage; PD = Perennial Drainage; SWS = Seasonal Wetland Swale; US = Upland Swale.



# 6 Conclusion

## 6.1 Summary of Delineation Results

Based on all the data collected during the field delineation, Dudek determined that approximately 69.76 acres (28,152.21 linear feet) of combined wetlands and NWW aquatic resources occur on the PSA (Table 6). This includes the following wetland features: freshwater emergent wetland (0.02 acre), pond (17.01 acres), seasonal wetland (14.16 acres), and vernal pool (6.30 acres); and the following NWWs: ditch 1.93 acres (4,385.29 linear feet), ephemeral drainage 1.11 acres (3,431.84 linear feet), intermittent drainage 2.36 acres (4,462.81 linear feet), perennial drainage (i.e., the Cosumnes River) 24.10 acres (4,506.29 linear feet), seasonal wetland swale 2.15 acres (8,807.18 linear feet), and upland swale 0.63 acres (1,837.55 linear feet) (See Table 1, Summary of Aquatic Resources within the Project Study Area).

## 6.2 Summary of Aquatic Resources within the Solar Development Area of The Project Study Area

Furthermore, Dudek has determined that approximately 5.85 acres of combined wetlands and NWW aquatic resources occur within the solar development area of the PSA based on the final preferred environmental alternative site plan dated June 2022 (DESRI 2022) (see below Table 6. Summary of Aquatic Resources within the Solar Development Area and Adjacent Other Lands of the Project Study Area).

**Table 6. Summary of Aquatic Resources within the Solar Development Area and Adjacent Other Lands of the PSA.**

| Aquatic Resource Feature      | Aquatic Resource Type | Total Acreage |
|-------------------------------|-----------------------|---------------|
| <b>Solar Development Area</b> |                       |               |
| Ditch                         | NWW                   | 0.15          |
| Ephemeral Drainage            | NWW                   | 0.74          |
| Intermittent Drainage         | NWW                   | 0.46          |
| Seasonal Wetland Swale        | NWW                   | 0.70          |
| Upland Swale                  | NWW                   | 0.08          |
| Pond                          | Wetlands              | 0.37          |
| Seasonal Wetland              | Wetlands              | 3.10          |
| Vernal Pool                   | Wetlands              | 0.25          |
|                               | <i>Sub-Total</i>      | 5.85          |
| <b>Adjacent Other Lands</b>   |                       |               |
| Ditch                         | NWW                   | 1.78          |
| Ephemeral Drainage            | NWW                   | 0.37          |
| Intermittent Drainage         | NWW                   | 1.91          |
| Perennial Drainage            | NWW                   | 24.10         |
| Seasonal Wetland Swale        | NWW                   | 1.45          |

**Table 6. Summary of Aquatic Resources within the Solar Development Area and Adjacent Other Lands of the PSA.**

| Aquatic Resource Feature    | Aquatic Resource Type | Total Acreage |
|-----------------------------|-----------------------|---------------|
| Upland Swale                | NWW                   | 0.54          |
| Freshwater Emergent Wetland | Wetlands              | 0.02          |
| Pond                        | Wetlands              | 16.64         |
| Seasonal Wetland            | Wetlands              | 11.06         |
| Vernal Pool                 | Wetlands              | 6.04          |
|                             | <i>Sub-Total</i>      | 63.90         |
|                             | <b>Total</b>          | <b>69.75</b>  |

A summary of individual aquatic resources and their location of occurrence within the PSA (i.e., within the solar development area or within the adjacent other lands) is provided below in Table 7. Summary of Individual Aquatic Resources Features in the Project Study Area. Additionally, in accordance with the *USACE Sacramento District Minimum Standards for Acceptance of Aquatic Resources Delineation Reports* (USACE 2016), the completed Aquatic Resources Excel Spreadsheet is provided in Appendix E, Aquatic Resources Spreadsheet, and a compilation of shapefiles are provided as electronic files. Lastly, See Section 7 Discussion for a complete preliminary jurisdictional assessment of aquatics resources within the PSA.

**Table 7. Summary of Individual Aquatic Resource Features in the Project Study Area**

| Feature ID <sup>1</sup> | Cowardin Code <sup>2</sup> | Location (Decimal Degrees-Latitude, Longitude) | PSA – Adjacent Other Lands |             | PSA – Solar Development Area |             | PSA   |             |
|-------------------------|----------------------------|------------------------------------------------|----------------------------|-------------|------------------------------|-------------|-------|-------------|
|                         |                            |                                                | Acres                      | Linear Feet | Acres                        | Linear Feet | Acres | Linear Feet |
| <b>Wetlands</b>         |                            |                                                |                            |             |                              |             |       |             |
| FEW-01                  | PEM1                       | 38.4670895771522°, -121.191322717007°          | 0.02                       | –           | 0                            | –           | 0.02  | –           |
| P-01                    | PEM1                       | 38.4819253549467°, -121.185400806494°          | 0.28                       | –           | 0                            | –           | 0.28  | –           |
| P-02                    | PEM1                       | 38.465587427291°, -121.180734538119°           | 0                          | –           | 0.37                         | –           | 0.37  | –           |
| P-03                    | PEM1                       | 38.4717967409132°, -121.190191234004°          | 16.36                      | –           | 0                            | –           | 16.36 | –           |
| SW-01                   | PEM2                       | 38.4754332551199°, -121.174595377416°          | 0                          | –           | 0.01                         | –           | 0.01  | –           |
| SW-02                   | PEM2                       | 38.4755371804127°, -121.174338882215°          | 0                          | –           | 0.01                         | –           | 0.01  | –           |
| SW-03                   | PEM2                       | 38.4751670534498°, -121.174855539646°          | 0.05                       | –           | 0.06                         | –           | 0.12  | –           |
| SW-04                   | PEM2                       | 38.4747490059207°, -121.174960491977°          | 0.04                       | –           | 0                            | –           | 0.04  | –           |
| SW-05                   | PEM2                       | 38.4750382543669°, -121.174578067547°          | 0.02                       | –           | 0.04                         | –           | 0.06  | –           |

**Table 7. Summary of Individual Aquatic Resource Features in the Project Study Area**

| Feature ID <sup>1</sup> | Cowardin Code <sup>2</sup> | Location (Decimal Degrees-Latitude, Longitude) | PSA – Adjacent Other Lands |             | PSA – Solar Development Area |             | PSA   |             |
|-------------------------|----------------------------|------------------------------------------------|----------------------------|-------------|------------------------------|-------------|-------|-------------|
|                         |                            |                                                | Acres                      | Linear Feet | Acres                        | Linear Feet | Acres | Linear Feet |
| SW-06                   | PEM2                       | 38.4745132464897°, -121.174477680754°          | 0.06                       | –           | 0                            | –           | 0.06  | –           |
| SW-07                   | PEM2                       | 38.4744595283901°, -121.17535896531°           | 0                          | –           | 0.03                         | –           | 0.03  | –           |
| SW-08                   | PEM2                       | 38.4742335114253°, -121.174724630517°          | 0.01                       | –           | 0                            | –           | 0.01  | –           |
| SW-09                   | PEM2                       | 38.4745342914795°, -121.174799821139°          | 0.02                       | –           | 0                            | –           | 0.02  | –           |
| SW-10                   | PEM2                       | 38.4743597739247°, -121.174854660311°          | 0.01                       | –           | 0                            | –           | 0.01  | –           |
| SW-11                   | PEM2                       | 38.474075707997°, -121.174538269156°           | 0.01                       | –           | 0                            | –           | 0.01  | –           |
| SW-12                   | PEM2                       | 38.4738556803195°, -121.173923908338°          | 0.02                       | –           | 0                            | –           | 0.02  | –           |
| SW-13                   | PEM2                       | 38.4738136944208°, -121.174005211443°          | 0.01                       | –           | 0                            | –           | 0.01  | –           |
| SW-14                   | PEM2                       | 38.4732576087339°, -121.172725210249°          | 0.03                       | –           | 0                            | –           | 0.03  | –           |
| SW-15                   | PEM2                       | 38.4726572480915°, -121.173468450191°          | 0.29                       | –           | 0                            | –           | 0.29  | –           |
| SW-16                   | PEM2                       | 38.4730125122684°, -121.174144971426°          | 0.09                       | –           | 0                            | –           | 0.09  | –           |
| SW-17                   | PEM2                       | 38.4735351020194°, -121.173918560472°          | 0.12                       | –           | 0                            | –           | 0.12  | –           |
| SW-18                   | PEM2                       | 38.4720304127386°, -121.173128032855°          | 0.13                       | –           | 0                            | –           | 0.13  | –           |
| SW-19                   | PEM2                       | 38.4715168278859°, -121.174216073448°          | 6.78                       | –           | 0.01                         | –           | 6.79  | –           |
| SW-20                   | PEM2                       | 38.4751976832986°, -121.173045040118°          | 0.03                       | –           | 0                            | –           | 0.03  | –           |
| SW-21                   | PEM2                       | 38.4685359739627°, -121.175028244135           | 0.01                       | –           | 0                            | –           | 0.01  | –           |
| SW-22                   | PEM2                       | 38.4678055506133°, -121.175682993117°          | 0                          | –           | 0.09                         | –           | 0.09  | –           |
| SW-23                   | PEM2                       | 38.4675938051611°, -121.176337675668°          | 0                          | –           | 0.03                         | –           | 0.03  | –           |
| SW-24                   | PEM2                       | 38.4724658319146°, -121.178385239361°          | 0                          | –           | 2.50                         | –           | 2.50  | –           |
| SW-25                   | PEM2                       | 38.4734445202875°, -121.176154008011°          | 0                          | –           | 0.02                         | –           | 0.02  | –           |



**Table 7. Summary of Individual Aquatic Resource Features in the Project Study Area**

| Feature ID <sup>1</sup> | Cowardin Code <sup>2</sup> | Location (Decimal Degrees-Latitude, Longitude) | PSA – Adjacent Other Lands |             | PSA – Solar Development Area |             | PSA   |             |
|-------------------------|----------------------------|------------------------------------------------|----------------------------|-------------|------------------------------|-------------|-------|-------------|
|                         |                            |                                                | Acres                      | Linear Feet | Acres                        | Linear Feet | Acres | Linear Feet |
| SW-26                   | PEM2                       | 38.4732742657097°, -121.175969523099°          | 0                          | –           | 0.01                         | –           | 0.01  | –           |
| SW-27                   | PEM2                       | 38.4728075817419°, -121.175777033508°          | 0                          | –           | 0.04                         | –           | 0.04  | –           |
| SW-28                   | PEM2                       | 38.4772002685563°, -121.176424362259°          | 0                          | –           | 0.04                         | –           | 0.04  | –           |
| SW-29                   | PEM2                       | 38.4788902911226°, -121.180856275605°          | 0                          | –           | 0.02                         | –           | 0.02  | –           |
| SW-30                   | PEM2                       | 38.4787686648156°, -121.183277423274°          | 0.09                       | –           | 0.00                         | –           | 0.09  | –           |
| SW-31                   | PEM2                       | 38.4744226321466°, -121.187403404311°          | 1.69                       | –           | 0                            | –           | 1.69  | –           |
| SW-32                   | PEM2                       | 38.4755445153218°, -121.182605063977°          | 0                          | –           | 0.07                         | –           | 0.07  | –           |
| SW-33                   | PEM2                       | 38.4729489980154°, -121.185982177625°          | 0.03                       | –           | 0                            | –           | 0.03  | –           |
| SW-34                   | PEM2                       | 38.4728518188422°, -121.186532152281°          | 0.00                       | –           | 0                            | –           | 0     | –           |
| SW-35                   | PEM2                       | 38.4732144318882°, -121.186854350275°          | 0.01                       | –           | 0                            | –           | 0.01  | –           |
| SW-36                   | PEM2                       | 38.4717030039265°, -121.186237839194°          | 0.02                       | –           | 0.01                         | –           | 0.03  | –           |
| SW-37                   | PEM2                       | 38.4720548263364°, -121.189012976036°          | 1.00                       | –           | 0                            | –           | 1.00  | –           |
| SW-38                   | PEM2                       | 38.4794263111125°, -121.184561744576°          | 0                          | –           | 0.03                         | –           | 0.03  | –           |
| SW-39                   | PEM2                       | 38.4766232356846°, -121.189746927721°          | 0.12                       | –           | 0                            | –           | 0.12  | –           |
| SW-40                   | PEM2                       | 38.4805795868672°, -121.189388474223°          | 0.05                       | –           | 0                            | –           | 0.05  | –           |
| SW-41                   | PEM2                       | 38.4679501741174°, -121.179411996677°          | 0                          | –           | 0.02                         | –           | 0.02  | –           |
| SW-42                   | PEM2                       | 38.4828099364111°, -121.186503598419°          | 0.23                       | –           | 0                            | –           | 0.23  | –           |
| SW-43                   | PEM2                       | 38.4650008867282°, -121.182539937882°          | 0                          | –           | 0.01                         | –           | 0.01  | –           |
| SW-44                   | PEM2                       | 38.4648829082205°, -121.182900655394°          | 0                          | –           | 0                            | –           | 0.00  | –           |
| SW-45                   | PEM2                       | 38.4657393663553°, -121.185281138674°          | 0                          | –           | 0.04                         | –           | 0.04  | –           |

**Table 7. Summary of Individual Aquatic Resource Features in the Project Study Area**

| Feature ID <sup>1</sup> | Cowardin Code <sup>2</sup> | Location (Decimal Degrees-Latitude, Longitude) | PSA – Adjacent Other Lands |             | PSA – Solar Development Area |             | PSA   |             |
|-------------------------|----------------------------|------------------------------------------------|----------------------------|-------------|------------------------------|-------------|-------|-------------|
|                         |                            |                                                | Acres                      | Linear Feet | Acres                        | Linear Feet | Acres | Linear Feet |
| SW-46                   | PEM2                       | 38.4639874922506°, -121.18578345145°           | 0                          | –           | 0.01                         | –           | 0.01  | –           |
| SW-47                   | PEM2                       | 38.4629885200443°, -121.184226733982°          | 0                          | –           | 0                            | –           | 0.00  | –           |
| SW-48                   | PEM2                       | 38.4629120242012°, -121.184057048343°          | 0.01                       | –           | 0                            | –           | 0.01  | –           |
| SW-49                   | PEM2                       | 38.4630567639944°, -121.183811326599°          | 0.01                       | –           | 0                            | –           | 0.01  | –           |
| SW-50                   | PEM2                       | 38.4627335626166°, -121.183628558106°          | 0.04                       | –           | 0                            | –           | 0.04  | –           |
| SW-51                   | PEM2                       | 38.4629074890143°, -121.182112769696°          | 0.04                       | –           | 0                            | –           | 0.04  | –           |
| VP-01                   | PEM2                       | 38.4741820925553°, -121.172618725664°          | 4.49                       | –           | 0                            | –           | 4.49  | –           |
| VP-02                   | PEM2                       | 38.4733227154834°, -121.172479277734°          | 0.04                       | –           | 0                            | –           | 0.04  | –           |
| VP-03                   | PEM2                       | 38.4730022331018°, -121.172734627849°          | 0.08                       | –           | 0                            | –           | 0.08  | –           |
| VP-04                   | PEM2                       | 38.4730297157974°, -121.173041681005°          | 0.01                       | –           | 0                            | –           | 0.01  | –           |
| VP-05                   | PEM2                       | 38.479348511788°, -121.189471154155°           | 1.06                       | –           | 0                            | –           | 1.06  | –           |
| VP-06                   | PEM2                       | 38.4715732502321°, -121.183970307729°          | 0                          | –           | 0.01                         | –           | 0.01  | –           |
| VP-07                   | PEM2                       | 38.466566835075°, -121.18001165509°            | 0                          | –           | 0.06                         | –           | 0.06  | –           |
| VP-08                   | PEM2                       | 38.465379922014°, -121.180894303284°           | 0                          | –           | 0.06                         | –           | 0.06  | –           |
| VP-09                   | PEM2                       | 38.4649876429087°, -121.183526220167°          | 0                          | –           | 0.01                         | –           | 0.01  | –           |
| VP-10                   | PEM2                       | 38.4740167844846°, -121.174304170043°          | 0.03                       | –           | 0                            | –           | 0.03  | –           |
| VP-11                   | PEM2                       | 38.4679555676043°, -121.176193454947°          | 0                          | –           | 0.04                         | –           | 0.04  | –           |
| VP-12                   | PEM2                       | 38.4655118488297°, -121.184548255068°          | 0                          | –           | 0.02                         | –           | 0.02  | –           |
| VP-13                   | PEM2                       | 38.4654467334146°, -121.184949429614°          | 0                          | –           | 0.05                         | –           | 0.05  | –           |
| VP-14                   | PEM2                       | 38.4628313474258°, -121.183092119668°          | 0.06                       | –           | 0                            | –           | 0.06  | –           |

**Table 7. Summary of Individual Aquatic Resource Features in the Project Study Area**

| Feature ID <sup>1</sup>          | Cowardin Code <sup>2</sup> | Location (Decimal Degrees-Latitude, Longitude) | PSA – Adjacent Other Lands |             | PSA – Solar Development Area |             | PSA          |             |
|----------------------------------|----------------------------|------------------------------------------------|----------------------------|-------------|------------------------------|-------------|--------------|-------------|
|                                  |                            |                                                | Acres                      | Linear Feet | Acres                        | Linear Feet | Acres        | Linear Feet |
| VP-15                            | PEM2                       | 38.4626377095329°, -121.182280042327°          | 0.11                       | –           | 0                            | –           | 0.11         | –           |
| VP-16                            | PEM2                       | 38.4622337009951°, -121.182596569915°          | 0.11                       | –           | 0                            | –           | 0.11         | –           |
| VP-17                            | PEM2                       | 38.4739120138372°, -121.187629207621°          | 0.05                       | –           | 0                            | –           | 0.05         | –           |
| <b>Total Wetlands</b>            |                            |                                                | <b>33.76</b>               | <b>–</b>    | <b>3.72</b>                  | <b>–</b>    | <b>37.48</b> | <b>–</b>    |
| <b>Non-Wetland Waters (NWWs)</b> |                            |                                                |                            |             |                              |             |              |             |
| D-01                             | R5                         | 38.4611358753613°, -121.180893009468°          | 0.24                       | 1,043       | 0                            | 0           | 0.24         | 1,043       |
| D-02                             | R5                         | 38.4798891304807°, -121.190599929993°          | 1.54                       | 3,342       | 0                            | 0           | 1.54         | 3,342       |
| D-03                             | R5                         | 38.466856000000°, -121.175812000000°           | 0                          | 0           | 0.06                         | 210         | 0.06         | 210         |
| D-04                             | R5                         | 38.466998000000°, -121.175552000000°           | 0                          | 0           | 0.09                         | 510         | 0.09         | 510         |
| ED-01                            | R6                         | 38.471714131699°, -121.182023058642°           | 0                          | 0           | 0.07                         | 860         | 0.07         | 860         |
| ED-02                            | R6                         | 38.4726951803214°, -121.183009591617°          | 0.19                       | 435         | 0.64                         | 1,418       | 0.83         | 1,853       |
| ED-03                            | R6                         | 38.4802253452188°, -121.189006104724°          | 0.17                       | 409         | 0.03                         | 161         | 0.19         | 570         |
| ED-04                            | R6                         | 38.4821063182203°, -121.185906231586°          | 0.01                       | 107         | 0                            | 0           | 0.01         | 107         |
| ED-05                            | R6                         | 38.4736229430754°, -121.187846376729°          | 0                          | 42          | 0                            | 0           | 0            | 42          |
| ID-01                            | R4                         | 38.4773863055538°, -121.184528143312°          | 1.91                       | 3,159       | 0.46                         | 1,304       | 2.36         | 4,463       |
| Perennial Drainage               | R3                         | 38.4833683471877°, -121.194087666619°          | 24.10                      | 4,506       | 0                            | 0           | 24.10        | 4,506       |
| SWS-01                           | R6                         | 38.4748967589724°, -121.174919727077°          | 0                          | 16          | 0                            | 0           | 0            | 16          |
| SWS-02                           | R6                         | 38.4794628004048°, -121.190338246248°          | 0.19                       | 309         | 0                            | 0           | 0.19         | 309         |
| SWS-03                           | R6                         | 38.4815388349953°, -121.189265624331°          | 0.01                       | 61          | 0                            | 0           | 0.01         | 61          |
| SWS-04                           | R6                         | 38.4699179605609°, -121.187036532012°          | 0.78                       | 1,909       | 0.34                         | 1,610       | 1.12         | 3,519       |
| SWS-05                           | R6                         | 38.4681389453308°, -121.191889550683°          | 0.27                       | 935         | 0                            | 0           | 0.27         | 935         |



**Table 7. Summary of Individual Aquatic Resource Features in the Project Study Area**

| Feature ID <sup>1</sup> | Cowardin Code <sup>2</sup> | Location (Decimal Degrees-Latitude, Longitude) | PSA – Adjacent Other Lands |               | PSA – Solar Development Area |              | PSA          |               |
|-------------------------|----------------------------|------------------------------------------------|----------------------------|---------------|------------------------------|--------------|--------------|---------------|
|                         |                            |                                                | Acres                      | Linear Feet   | Acres                        | Linear Feet  | Acres        | Linear Feet   |
| SWS-06                  | R6                         | 38.4650356573229°, -121.184843327002°          | 0                          | 0             | 0.03                         | 1,046        | 0.03         | 1,046         |
| SWS-07                  | R6                         | 38.4624455185252°, -121.182890840053°          | 0.09                       | 222           | 0                            | 0            | 0.09         | 222           |
| SWS-08                  | R6                         | 38.4629556255681°, -121.18245969379°           | 0.03                       | 115           | 0                            | 0            | 0.03         | 115           |
| SWS-09                  | R6                         | 38.4786769993662°, -121.181815725396°          | 0                          | 0             | 0.05                         | 143          | 0.05         | 143           |
| SWS-10                  | R6                         | 38.4729401191742°, -121.186265677789°          | 0.00                       | 114           | 0                            | 0            | 0.01         | 114           |
| SWS-11                  | R6                         | 38.473178629851°, -121.187280182461°           | 0.02                       | 489           | 0                            | 0            | 0.02         | 489           |
| SWS-12                  | R6                         | 38.4734023239871°, -121.187197211204°          | 0.02                       | 535           | 0                            | 0            | 0.02         | 535           |
| SWS-13                  | R6                         | 38.4795985121156°, -121.18126641563°           | 0                          | 0             | 0.12                         | 351          | 0.12         | 351           |
| SWS-14                  | R6                         | 38.4799218644275°, -121.183258695467°          | 0                          | 0             | 0.15                         | 679          | 0.15         | 679           |
| SWS-15                  | R6                         | 38.4786642055228°, -121.184582473217°          | 0.04                       | 228           | 0.01                         | 46           | 0.05         | 273           |
| US-01                   | U                          | 38.4851464439103°, -121.193148747066°          | 468                        | 468           | 0                            | 0            | 0.49         | 468           |
| US-02                   | U                          | 38.4680973758159°, -121.183299209185°          | 0                          | 4             | 0.02                         | 141          | 0.02         | 244           |
| US-03                   | U                          | 38.4654090767667°, -121.181548206226°          | 0                          | 0             | 0.01                         | 240          | 0.01         | 240           |
| US-04                   | U                          | 38.4631713998385°, -121.183223315917°          | 148                        | 148           | 0                            | 0            | 0.02         | 148           |
| US-05                   | U                          | 38.4632462871422°, -121.182641494919°          | 139                        | 139           | 0                            | 0            | 0.02         | 139           |
| US-06                   | U                          | 38.4821152436334°, -121.185810085499°          | 56                         | 56            | 0                            | 0            | 0.01         | 56            |
| US-07                   | U                          | 38.467784342647°, -121.186163835286°           | 0                          | 0             | 0.04                         | 473          | 0.04         | 473           |
| US-08                   | U                          | 38.4718427908926°, -121.18333986713°           | 0                          | 0             | 0.02                         | 70           | 0.02         | 70            |
| <b>Total NWWS</b>       |                            |                                                | <b>30.14</b>               | <b>18,788</b> | <b>2.13</b>                  | <b>9,261</b> | <b>32.27</b> | <b>28,048</b> |
| <b>Total</b>            |                            |                                                | <b>63.09</b>               | <b>18,788</b> | <b>5.85</b>                  | <b>9,261</b> | <b>69.75</b> | <b>28,048</b> |

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## 7 Discussion

This report preliminarily identifies all aquatic resources within the solar development area of the PSA as Waters of the United States, meeting the criteria of waters of the United States pursuant to regulations in Section 404 of the CWA (Appendix E, USACE Aquatic Resources Spreadsheet).

A total of 5.85 acres (9,260.86 linear feet) of waters of the United States specifically occur within the solar development area of the PSA based on the final preferred environmental alternative site plan dated June 2022 (DESRI 2022). This includes the following resource totals for wetlands: 0.37 acre of ponds, 3.10 acres of seasonal wetlands, and 0.25 acre of vernal pools; as well as the following totals for NWWs: 0.15 acre (923.59 linear feet) of ditches, 0.74 acre (2,439.08 linear feet) of ephemeral drainages, 0.46 acre (1,303.60 linear feet) of intermittent drainages, 0.70 acre (3,874.33 linear feet) of seasonal wetland swales, and 0.08 acre (923.59 linear feet) of upland swales. No perennial drainages or freshwater emergent wetlands occur within the solar development area of the PSA. As outlined in Section 3.1, aquatic resources within the PSA were preliminary identified as Waters of the United States based on the current USACE definition (e.g., meet the relatively permanent standard and/or may have a significant nexus). The jurisdictional determinations for aquatic resources delineated in the PSA are preliminary until verified by the USACE Sacramento District.



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## 8 References

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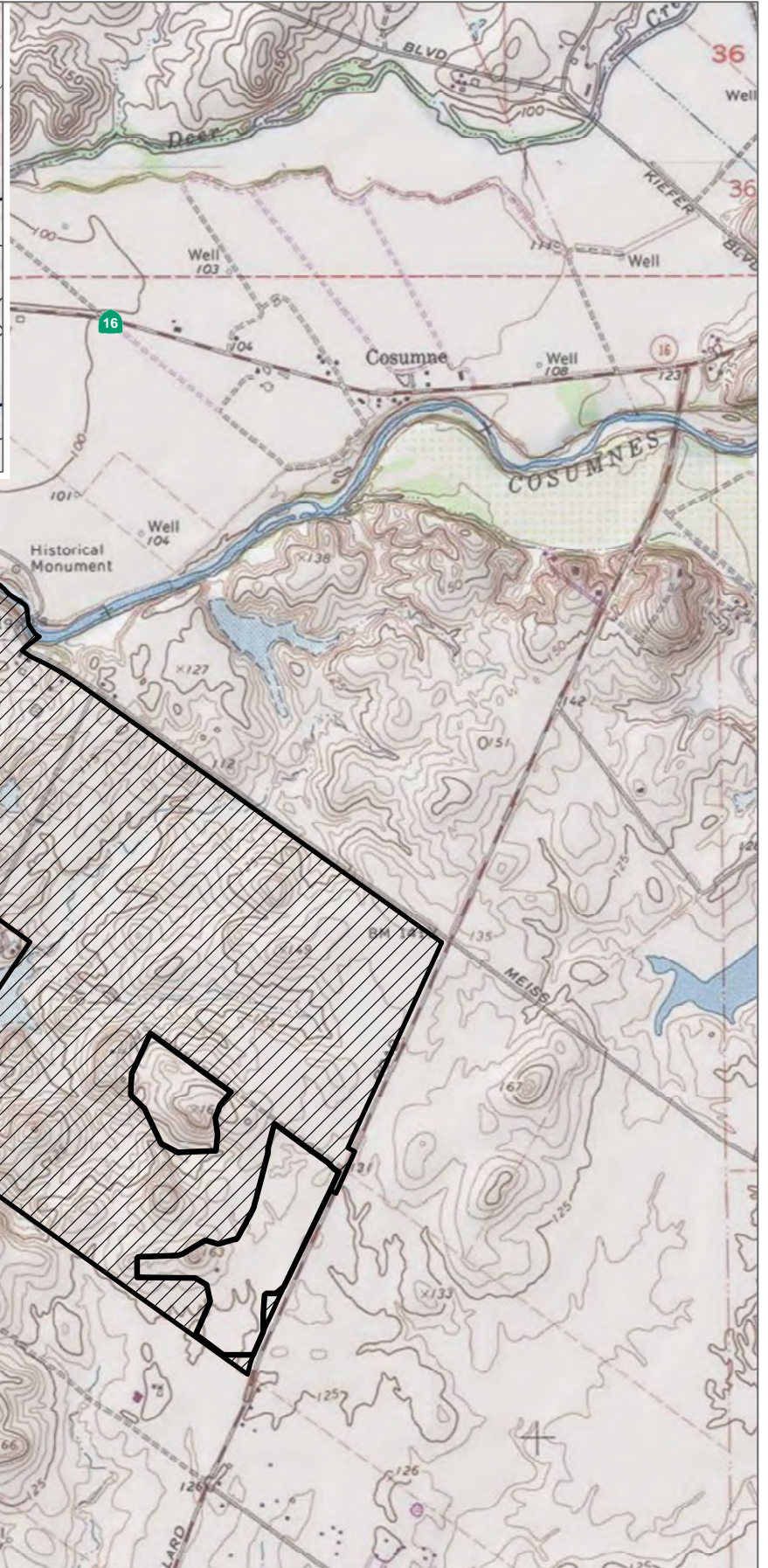
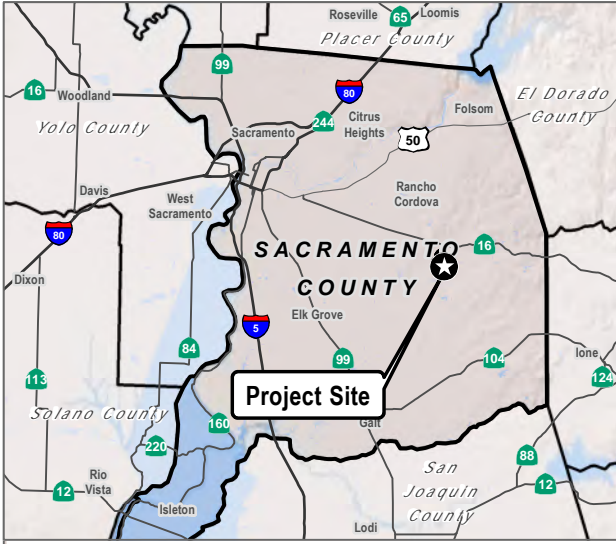
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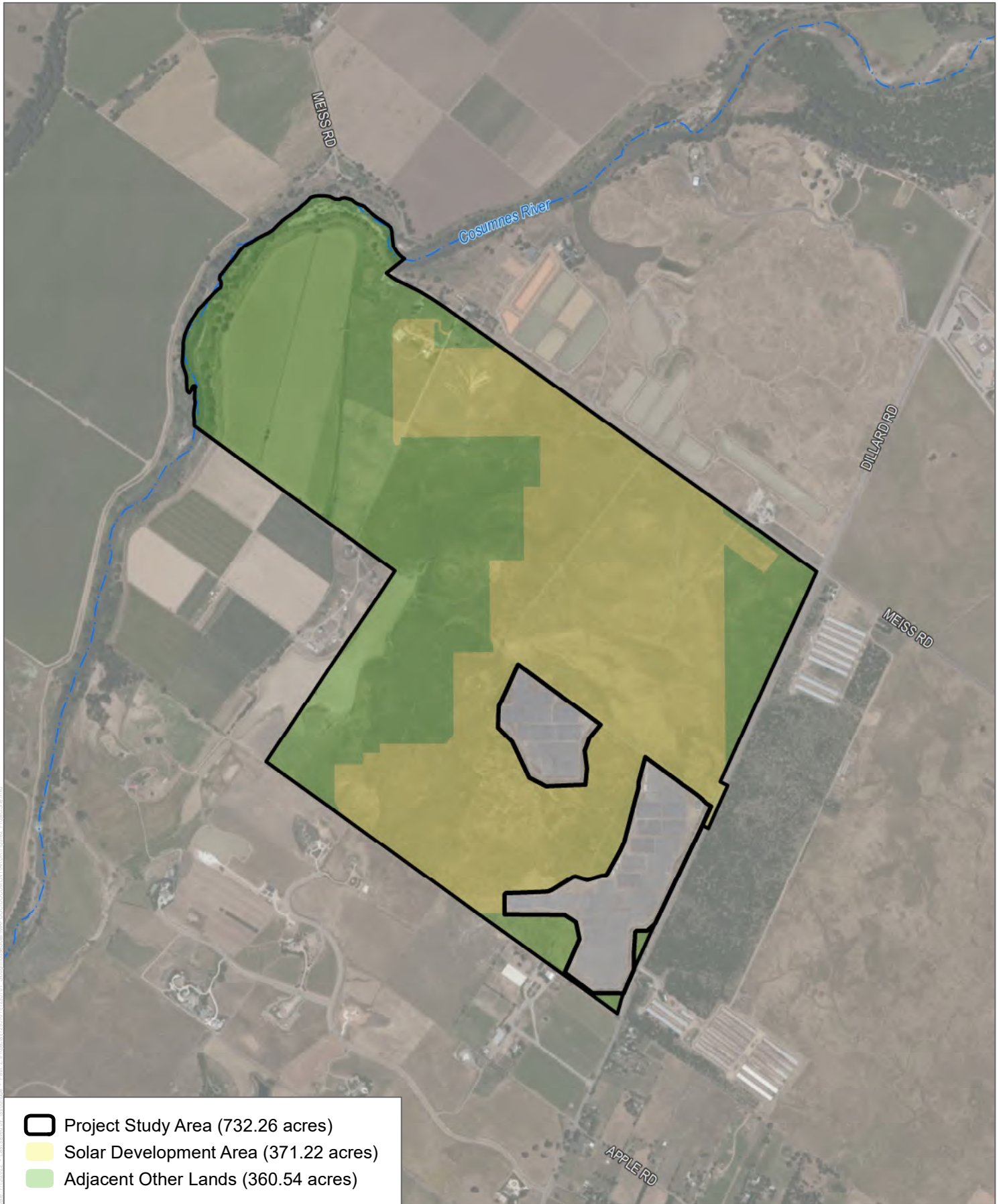
 Project Study Area (732.26 acres)

SOURCE: USGS 7.5-Minute Series Sloughouse Quadrangle, Environmentally Preferred Alternative Site Plan - DESRI (6/24/2022)

**FIGURE 1**



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SOURCE: Bing Maps (2020), Sacramento County (2019), Environmentally Preferred Alternative Site Plan - DESRI (6/24/2022)

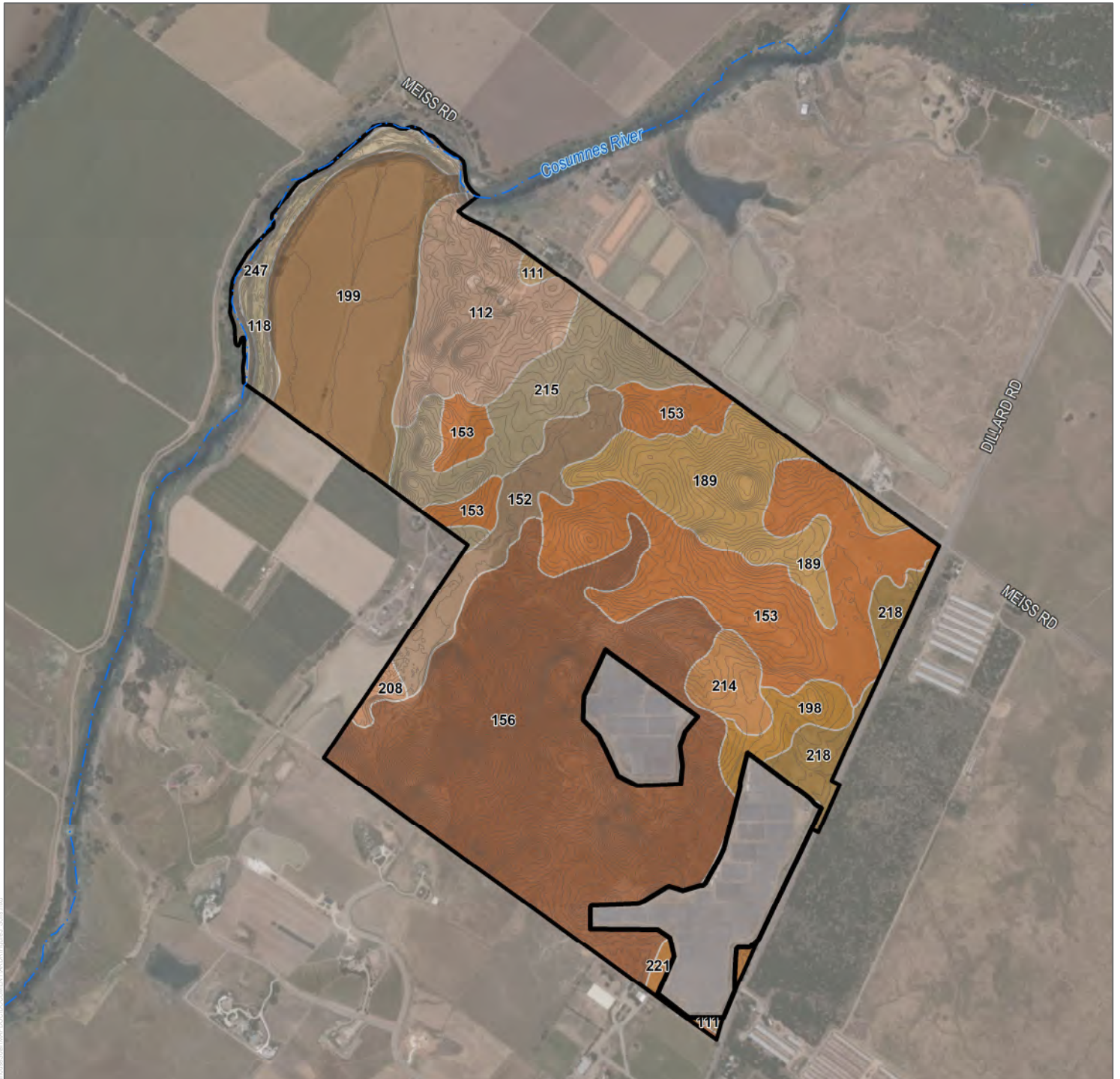
**FIGURE 2**

**Project Setting**

Sloughouse Solar Project

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Project Study Area (732.26 acres)

NHD Flowline

2-foot Contours

**Soil Classification**

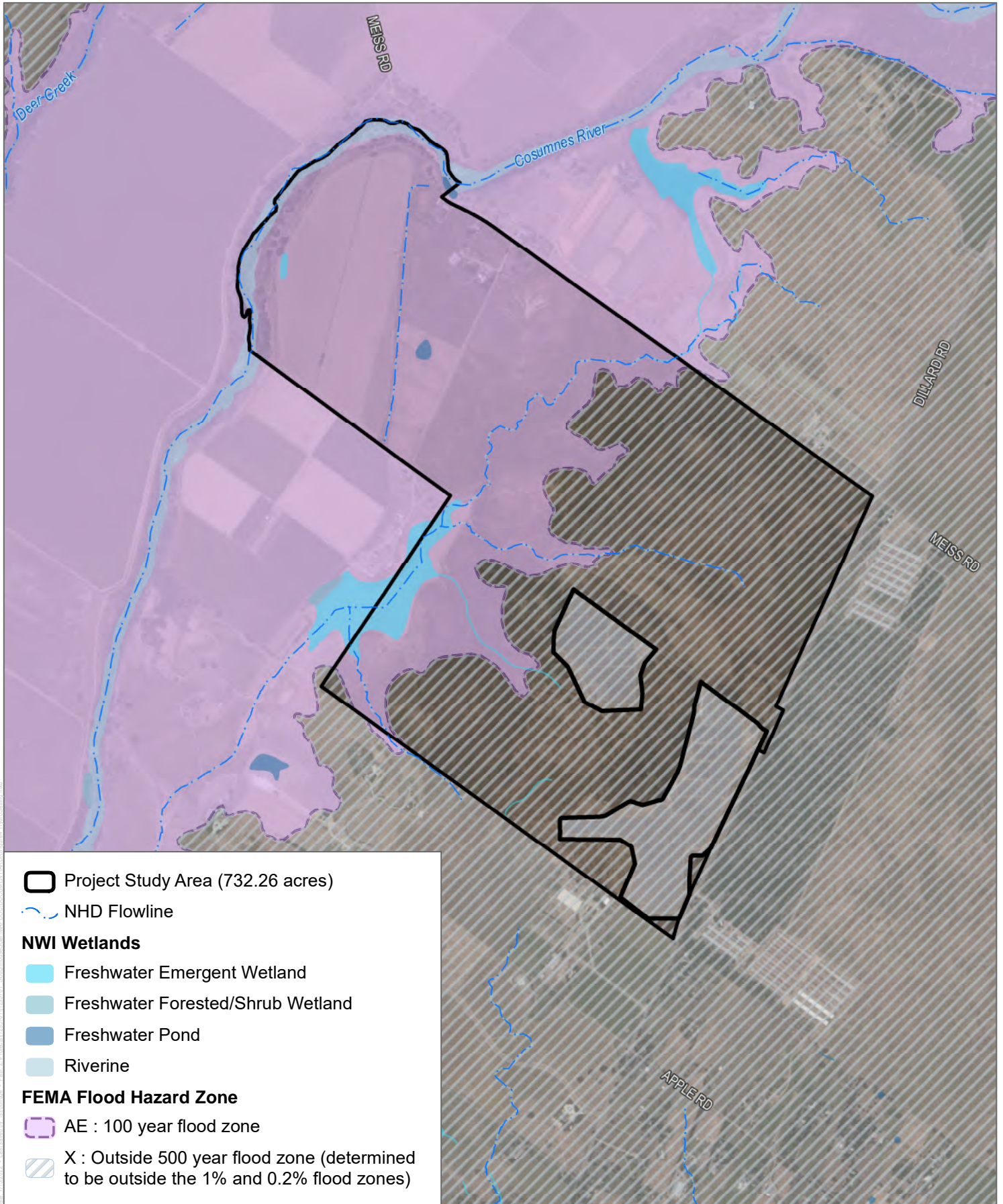
- 111 : Bruella sandy loam, 0 to 2 percent slopes
- 112 : Bruella sandy loam, 2 to 5 percent slopes
- 118 : Columbia sandy loam, drained, 0 to 2 percent slopes, occasionally flooded
- 152 : Galt clay, 0 to 2 percent slopes
- 153 : Galt clay, 2 to 5 percent slopes
- 156 : Hadselville-Pentz complex, 2 to 30 percent slopes
- 189 : Peters clay, 1 to 8 percent slopes

- 198 : Redding gravelly loam, 0 to 8 percent slopes
- 199 : Reiff fine sandy loam, 0 to 2 percent slopes, occasionally flood ed
- 208 : Sailboat silt loam, drained, 0 to 2 percent slopes, occasionally flooded
- 214 : San Joaquin silt loam, 0 to 3 percent slopes
- 215 : San Joaquin silt loam, 3 to 8 percent slopes
- 216 : San Joaquin-Durixeralfs complex, 0 to 1 percent slopes
- 217 : San Joaquin-Galt complex, leveled, 0 to 1 percent slopes
- 218 : San Joaquin-Galt complex, 0 to 3 percent slopes
- 221 : San Joaquin-Xerarents complex, leveled, 0 to 1 percent slopes
- 247 : Water

SOURCE: Bing Maps (2020), Sacramento County (2019), USDA (2019), Environmentally Preferred Alternative Site Plan - DESRI (6/24/2022)

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SOURCE: Bing Maps (2020), NHD (2019), Sacramento County (2019), USFWS (2020), FEMA (2019), Environmentally Preferred Alternative Site Plan - DESRI (6/24/2022)

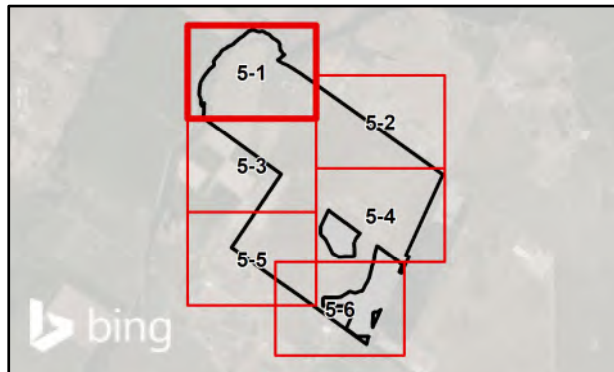
**FIGURE 4**

Hydrologic Setting  
Sloughouse Solar Project



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- Project Study Area (732.26 acres)
- Solar Development Area (371.22 acres)
- Adjacent Other Lands (360.54 acres)
- Below Top of Bank (TOB) / Edge of Riparian (24.10 acres) (4,506 linear feet)
- Below Ordinary High Water Mark (OHWM) (13.14 acres) (4,503 linear feet)
- 2-foot Contours
- Feature Point**
- Cattle Trough
- Culvert
- Pipe
- Sample Point / Transect Sample Location**
- Wetland Data Point
- Upland Data Point
- Transect Point
- Aquatic Resources**
- Wetlands (37.49 acres)**
- Freshwater Emergent Wetland (0.02 acre)
- Seasonal Wetland (14.16 acres)
- Vernal Pool (6.30 acres)
- Pond (17.01 acres)
- Waters (32.28 acres) (28,152 linear feet)**
- Ephemeral Drainage (1.11 acres) (3,432 linear feet)
- Intermittent Drainage (2.36 acres) (4,463 linear feet)
- Perennial Drainage (24.10 acres) (4,506 linear feet)
- Seasonal Wetland Swale (2.15 acre) (8,807 linear feet)
- Upland Swale (0.63 acre) (1,838 linear feet)
- Roadside Ditch (0.15 acres) (720 linear feet)
- Ditch (1.78 acres) (4,385 linear feet)



0 150 300 Feet

Coordinate System: NAD 1983 CA State Plane (Zone III)  
 Projection: Lambert Conformal CONIC  
 Datum: North American 1983  
 Vertical Datum: NAVD 88, U.S. Feet  
 1 inch = 300 feet

Created on December 3<sup>rd</sup>, 2020  
 Updated on July 15<sup>th</sup>, 2022

Made in accordance with the  
*Updated Map and Drawing Standards for the  
 South Pacific Division Regulatory Program,*  
 as amended on February 10, 2016, by:  
 Jason Deters, Project Manager  
 Enforcement and Special Projects Unit  
 U.S. Army Corps of Engineers  
 South Pacific Division  
 Sacramento District, Regulatory Division  
 1325 J Street, Room 1350  
 Sacramento, California 95814-2922



SOURCE: Bing Maps (2020), Sacramento County (2019), Environmentally Preferred Alternative Site Plan - DESRI (6/24/2022)

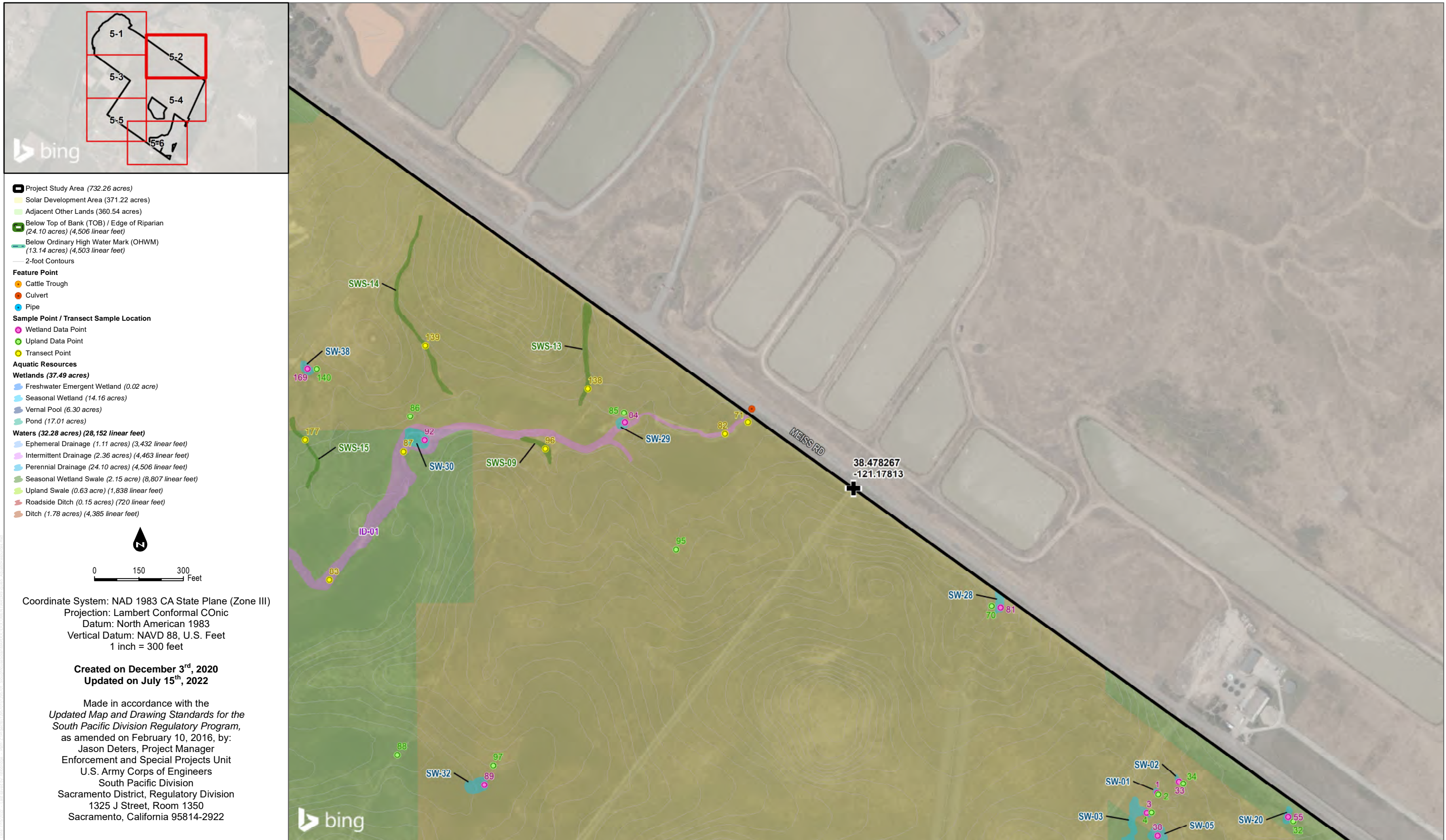


**FIGURE 5-1**  
**Aquatic Resources Delineation**  
 Sloughouse Solar Project



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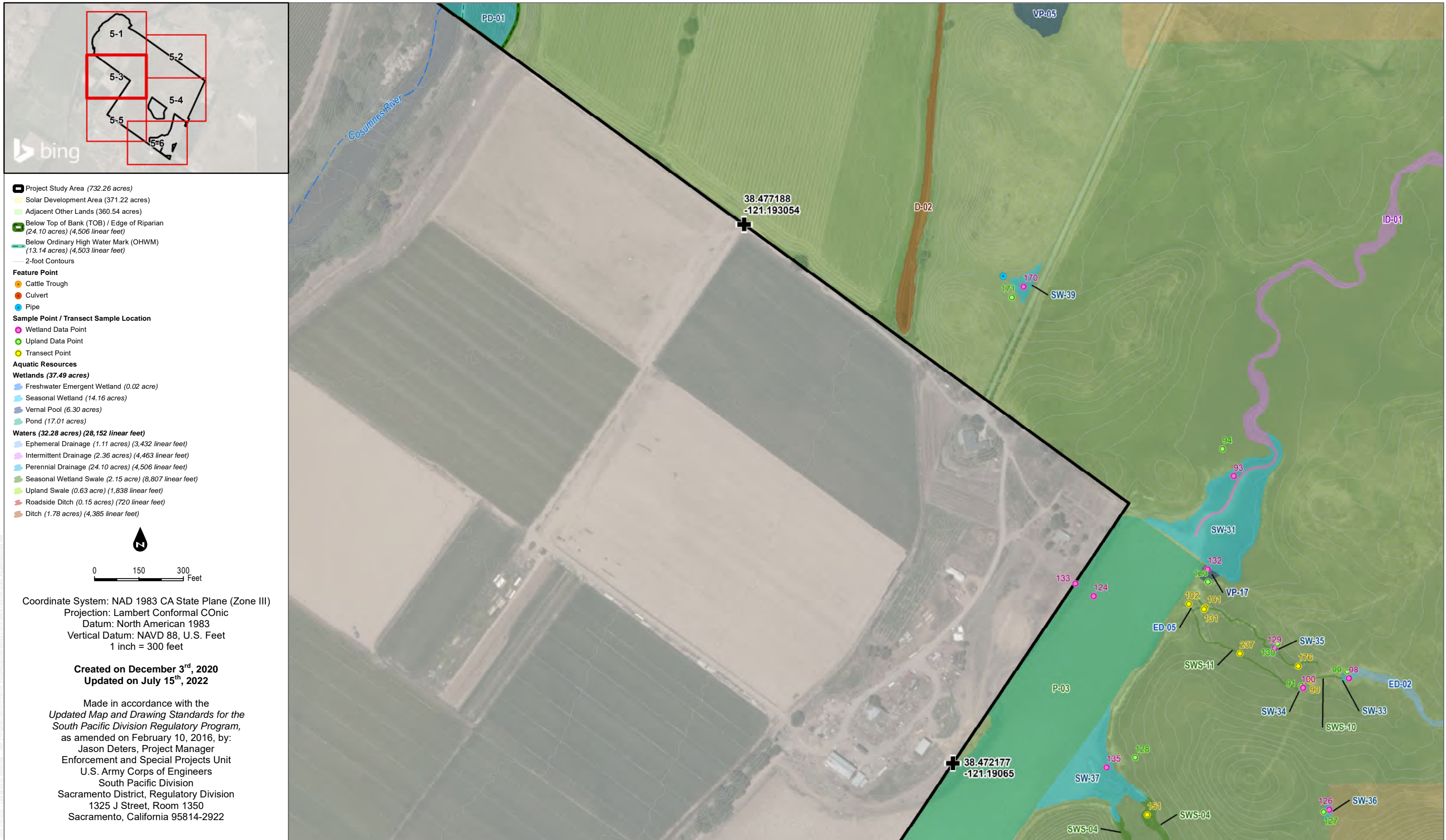
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**FIGURE 5-2**

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Figure 5-3 Aquatic Resources Delineation

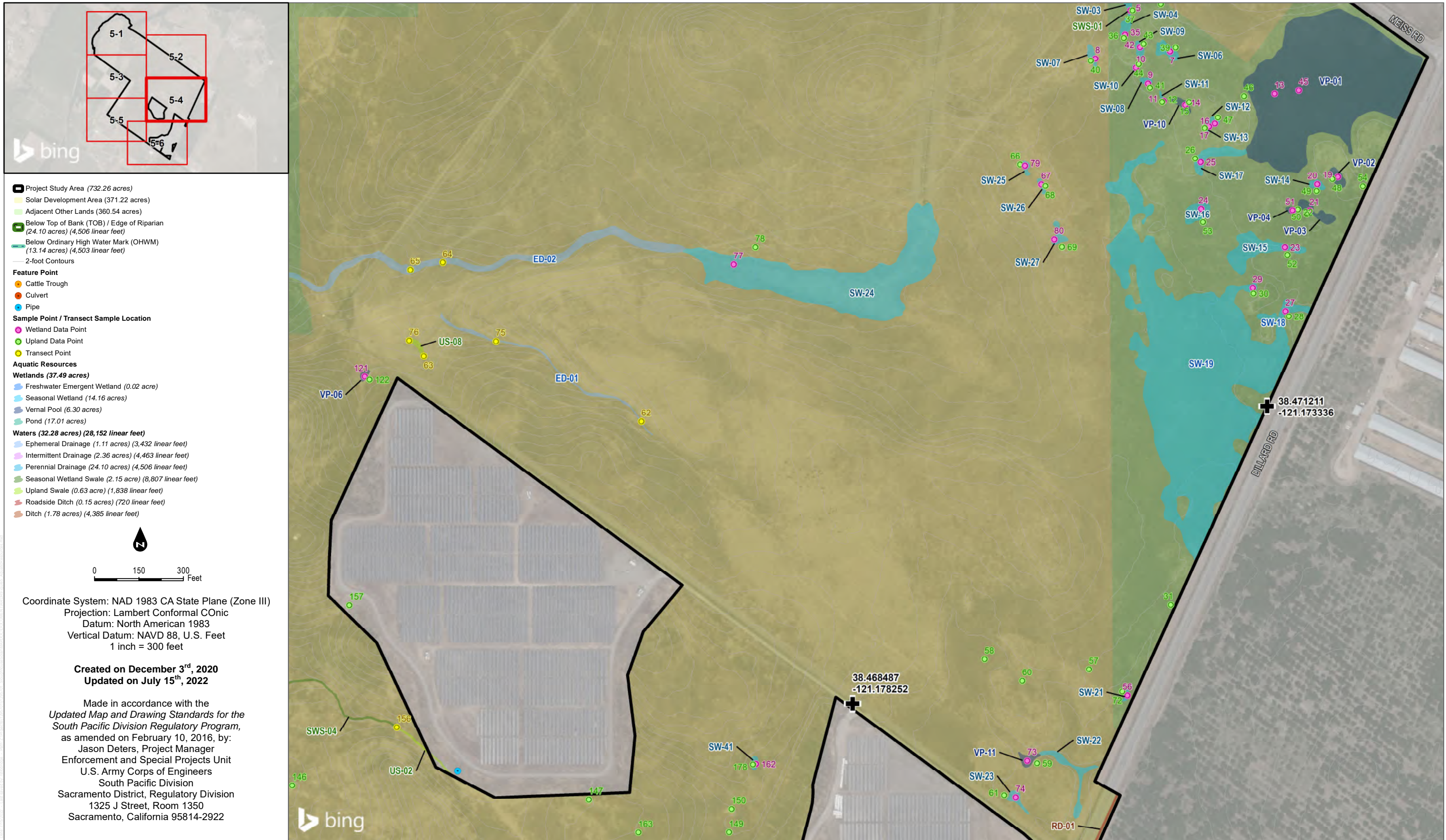




SOURCE: Bing Maps (2020), Sacramento County (2019), Environmentally Preferred Alternative Site Plan - DESRI (6/24/2022)

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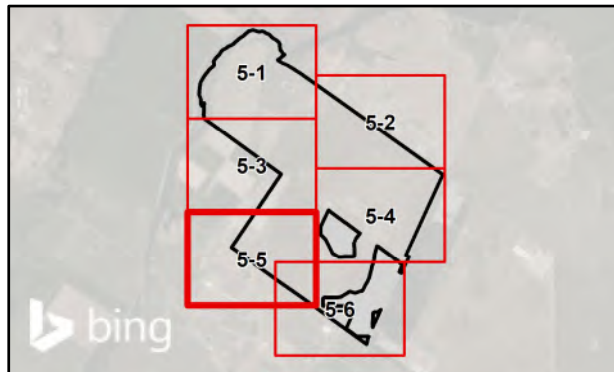




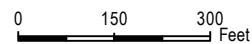
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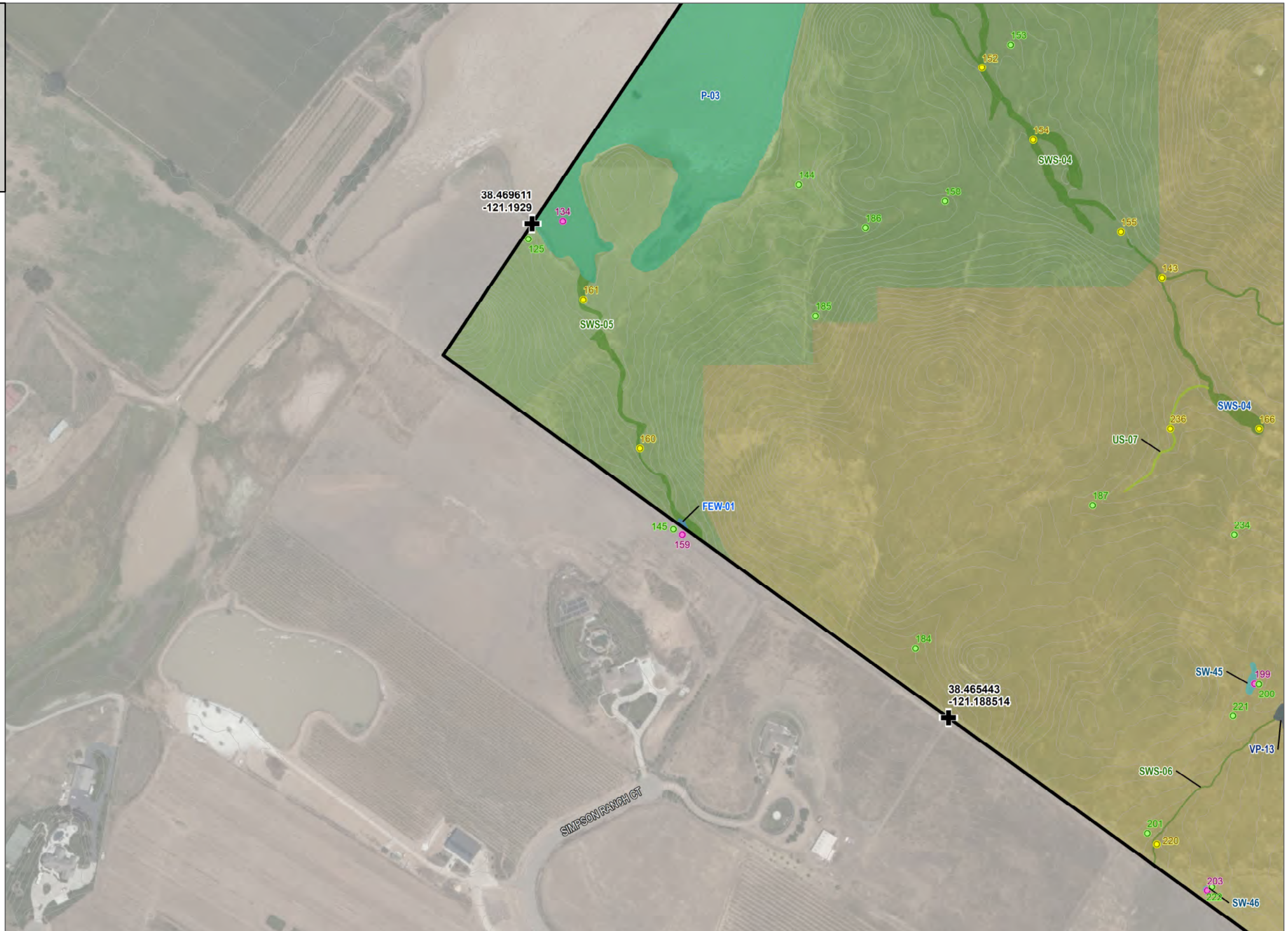
- Project Study Area (732.26 acres)
- Solar Development Area (371.22 acres)
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- Below Ordinary High Water Mark (OHWM) (13.14 acres) (4,503 linear feet)
- 2-foot Contours
- Feature Point**
- Cattle Trough
- Culvert
- Pipe
- Sample Point / Transect Sample Location**
- Wetland Data Point
- Upland Data Point
- Transect Point
- Aquatic Resources**
- Wetlands (37.49 acres)**
- Freshwater Emergent Wetland (0.02 acre)
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- Upland Swale (0.63 acre) (1,838 linear feet)
- Roadside Ditch (0.15 acres) (720 linear feet)
- Ditch (1.78 acres) (4,385 linear feet)



Coordinate System: NAD 1983 CA State Plane (Zone III)  
 Projection: Lambert Conformal Conic  
 Datum: North American 1983  
 Vertical Datum: NAVD 88, U.S. Feet  
 1 inch = 300 feet

Created on December 3<sup>rd</sup>, 2020  
 Updated on July 15<sup>th</sup>, 2022

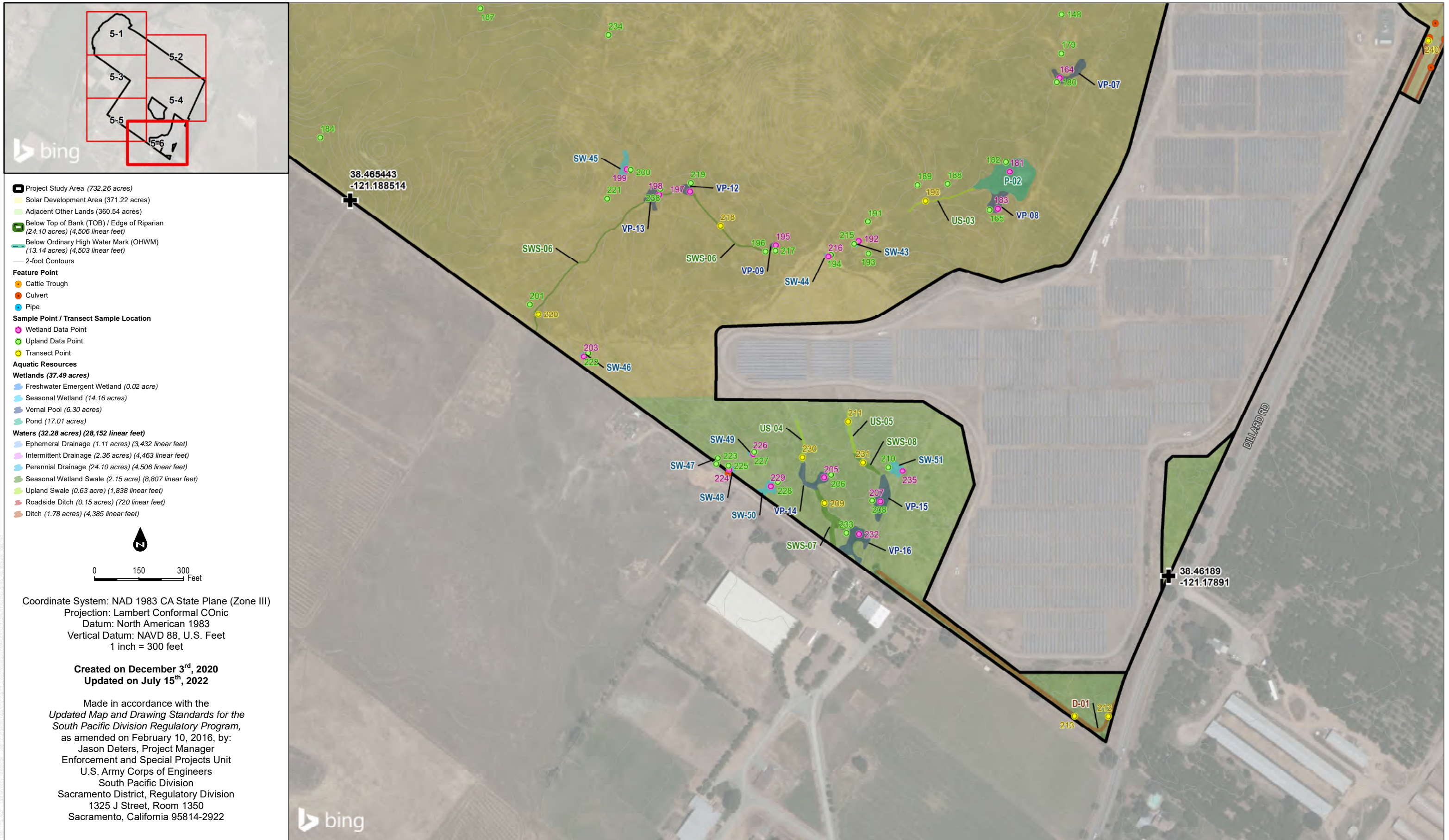
Made in accordance with the  
*Updated Map and Drawing Standards for the  
 South Pacific Division Regulatory Program,*  
 as amended on February 10, 2016, by:  
 Jason Deters, Project Manager  
 Enforcement and Special Projects Unit  
 U.S. Army Corps of Engineers  
 South Pacific Division  
 Sacramento District, Regulatory Division  
 1325 J Street, Room 1350  
 Sacramento, California 95814-2922



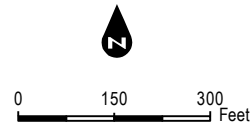
SOURCE: Bing Maps (2020), Sacramento County (2019), Environmentally Preferred Alternative Site Plan - DESRI (6/24/2022)

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- Project Study Area (732.26 acres)
- Solar Development Area (371.22 acres)
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Coordinate System: NAD 1983 CA State Plane (Zone III)  
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 1325 J Street, Room 1350  
 Sacramento, California 95814-2922

SOURCE: Bing Maps (2020), Sacramento County (2019), Environmentally Preferred Alternative Site Plan - DESRI (6/24/2022)

**FIGURE 5-6**  
 Aquatic Resources Delineation  
 Sloughouse Solar Project

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# **Appendix A**


## Request for Aquatic Resources Delineation Verification of Jurisdictional Determination



**REQUEST FOR AQUATIC RESOURCES DELINEATION VERIFICATION**  
**OR JURISDICTIONAL DETERMINATION**

A separate jurisdictional determination (JD) is not necessary to process a permit. An Approved Jurisdictional Determination (AJD) is required to definitively determine the extent of waters of the U.S. and is generally used to disclaim jurisdiction over aquatic resources that are not waters of the U.S., in cases where the review area contains no aquatic resources, and in cases when the recipient wishes to challenge the water of the U.S. determination on appeal. Either an Aquatic Resources Delineation Verification or a Preliminary Jurisdictional Determination (PJD) may be used when the recipient wishes to assume that aquatic resources are waters of the U.S. for the purposes of permitting. In some circumstances an AJD may require more information, a greater level of effort, and more time to produce. If you are unsure which product to request, please speak with your project manager or call the Sacramento District's general information line at (916) 557-5250.

I am requesting the product indicated below from the U.S. Army Corps of Engineers, Sacramento District, for the review area located at:

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Street Address: _____ City: _____ County: _____<br>State: _____ Zip: _____ Section: _____ Township: _____ Range: _____<br>Latitude (decimal degrees): _____ Longitude (decimal degrees): _____<br>The approximate size of the review area for the JD is _____ acres. <b>(Please attach location map)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                               |
| Choose one:<br><input type="checkbox"/> I own the review area<br><input type="checkbox"/> I hold an easement or development rights over the review area<br><input type="checkbox"/> I lease the review area<br><input type="checkbox"/> I plan to purchase the review area<br><input type="checkbox"/> I am an agent/consultant acting on behalf of the requestor<br>Other: _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Choose one product:<br><input type="checkbox"/> I am requesting an Aquatic Resources Delineation Verification<br><input type="checkbox"/> I am requesting an Approved JD<br><input type="checkbox"/> I am requesting a Preliminary JD<br><input type="checkbox"/> I am requesting additional information to inform my decision about which product to request |
| Reason for request: (check all that apply)<br><input type="checkbox"/> I need information concerning aquatic resources within the review area for planning purposes.<br><input type="checkbox"/> I intend to construct/develop a project or perform activities in this review area which would be designed to avoid all aquatic resources.<br><input type="checkbox"/> I intend to construct/develop a project or perform activities in this review area which would be designed to avoid those aquatic resources determined to be waters of the U.S.<br><input type="checkbox"/> I intend to construct/develop a project or perform activities in this review area which may require authorization from the Corps; this request is accompanied by my permit application.<br><input type="checkbox"/> I intend to construct/develop a project or perform activities in a navigable water of the U.S. which is included on the district's list of navigable waters under Section 10 of the Rivers and Harbors Act of 1899 and/or is subject to the ebb and flow of the tide.<br><input type="checkbox"/> My lender, insurer, investors, local unit of government, etc. has indicated that an aquatic resources delineation verification is inadequate and is requiring a jurisdictional determination.<br><input type="checkbox"/> I intend to contest jurisdiction over particular aquatic resources and request the Corps confirm that these aquatic resources are or are not waters of the U.S.<br><input type="checkbox"/> I believe that the review area may be comprised entirely of dry land.<br>Other: _____ |                                                                                                                                                                                                                                                                                                                                                               |
| Attached Information:<br>Maps depicting the general location and aquatic resources within the review area consistent with Map and Drawing Standards for the South Pacific Division Regulatory Program (Public Notice February 2016, <a href="http://www.spd.usace.army.mil/Missions/Regulatory/Public-Notices-and-References/Article/651327/updated-map-and-drawing-standards/">http://www.spd.usace.army.mil/Missions/Regulatory/Public-Notices-and-References/Article/651327/updated-map-and-drawing-standards/</a> )<br>Aquatic Resources Delineation Report, if available, consistent with the Sacramento District's Minimum Standards for Acceptance (Public Notice January 2016, <a href="http://1.usa.gov/1V68lYa">http://1.usa.gov/1V68lYa</a> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                               |
| By signing below, you are indicating that you have the authority, or are acting as the duly authorized agent of a person or entity with such authority, to and do hereby grant Corps personnel right of entry to legally access the review area. Your signature shall be an affirmation that you possess the requisite property rights for this request on the subject property.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                               |
| *Signature:  _____ Date: _____<br>Name: _____ Company name: _____<br>Address: _____<br>Telephone: _____ Email: _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                               |

**\*Authorities:** Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Program of the U.S. Army Corps of Engineers; Final Rule for 33 CFR Parts 320-332.

**Principal Purpose:** The information that you provide will be used in evaluating your request to determine whether there are any aquatic resources within the project area subject to federal jurisdiction under the regulatory authorities referenced above.

**Routine Uses:** This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public, and may be made available as part of a public notice as required by federal law. Your name and property location where federal jurisdiction is to be determined will be included in the approved jurisdictional determination (AJD), which will be made available to the public on the District's website and on the Headquarters USACE website.

**Disclosure:** Submission of requested information is voluntary; however, if information is not provided, the request for an AJD cannot be evaluated nor can an AJD be issued.

---

# **Appendix B**

## Photo Record



Photo 1: Freshwater Emergent Wetland (FEW)-01.



Photo 2: Representative photo of a seasonal wetland (SW-03) on site.





**Photo 3:** Another representative photo of a seasonal wetland (SW-33) on site.



**Photo 4:** Representative photo of a pond (Pond-01) on site.





Photo 5: Pond-03 (pictured) was actively being graded during the October/November field surveys.



Photo 6: Representative photo of a vernal pool (VP-07) on site showing the concentric rings of hydrophytic vegetation.

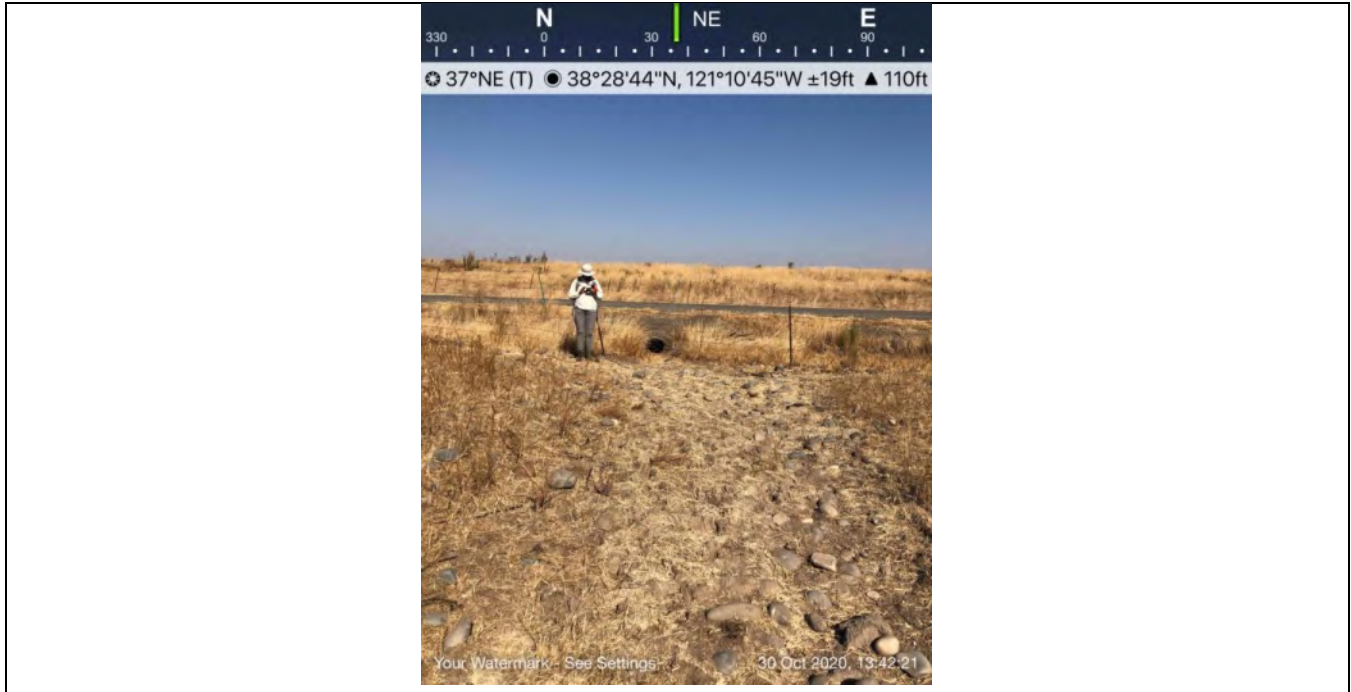


**Photo 7:** Representative photo of Ditch-02, which was inundated at the time of the October/November field survey and contained mostly upland vegetation.



**Photo 8:** Representative photo of an ephemeral drainage (ED-02) on site.





**Photo 9:** The intermittent drainage (ID-01) on site at its intersection with Meiss Road.



**Photo 10:** A portion of the Cosumnes River (Perennial Drainage-01) flows within the western boundary of the project site.



**Photo 11:** Representative photo of a seasonal wetland swale (SWS-06) on site.



**Photo 12:** Representative photo of an upland swale (US-04) on site.

---

# **Appendix C**

## Observed Plant Species Compendium



# VASCULAR SPECIES

## EUDICOTS

### ADOXACEAE—MUSKROOT FAMILY

*Sambucus nigra*—blue elderberry

### AMARANTHACEAE—AMARANTH FAMILY

\* *Amaranthus albus*—prostrate pigweed

### APIACEAE—CARROT FAMILY

- \* *Conium maculatum*—poison hemlock
- \* *Eryngium castrense*—Great Valley eryngo
- \* *Foeniculum vulgare*—fennel
- \* *Torilis arvensis*—spreading hedgeparsley

### ASTERACEAE—SUNFLOWER FAMILY

- Baccharis pilularis*—coyote brush
- \* *Carduus pycnocephalus*—Italian plumeless thistle
- \* *Centaurea solstitialis*—yellow star-thistle
- \* *Dittrichia graveolens*—stinkwort
- \* *Erigeron canadensis*—Canadian horseweed
- Holocarpha virgata*—yellowflower tarweed
- \* *Hypochaeris glabra*—smooth cat's ear
- \* *Hypochaeris radicata*—hairy cat's ear
- \* *Lactuca serriola*—prickly lettuce
- \* *Matricaria discoidea*—disc mayweed
- Psilocarphus brevissimus*—short woollyheads
- \* *Sonchus arvensis*—field sowthistle
- \* *Xanthium strumarium*—cocklebur

### BORAGINACEAE—BORAGE FAMILY

*Plagiobothrys bracteatus*—bracted popcornflower

### BRASSICACEAE—MUSTARD FAMILY

- \* *Brassica nigra*—black mustard
- \* *Lepidium latifolium*—perennial pepper weed

### CARYOPHYLLACEAE—PINK FAMILY

- \* *Spergularia rubra*—red sandspurry

**CONVOLVULACEAE—MORNING-GLORY FAMILY**

- \* *Convolvulus arvensis*—field bindweed

**CUCURBITACEAE—GOURD FAMILY**

*Cucurbita foetidissima*—Missouri gourd

**EUPHORBIACEAE—SPURGE FAMILY**

*Croton setiger*—dove weed

**FABACEAE—LEGUME FAMILY**

*Lupinus microcarpus*—valley lupine

- \* *Trifolium hirtum*—rose clover

**FAGACEAE—OAK FAMILY**

*Quercus agrifolia*—coast live oak

*Quercus lobata*—valley oak

**GERANIACEAE—GERANIUM FAMILY**

- \* *Erodium botrys*—longbeak stork's bill

- \* *Erodium cicutarium*—redstem stork's bill

**JUGLANDACEAE—WALNUT FAMILY**

*Juglans hindsii*—Northern California black walnut

**LAMIACEAE—MINT FAMILY**

*Trichostema lanceolatum*—vinegarweed

**LYTHRACEAE—LOOSESTRIFE FAMILY**

- \* *Lythrum hyssopifolia*—hyssop loosestrife

**MALVACEAE—MALLOW FAMILY**

- \* *Malva parviflora*—cheeseweed mallow

**ONAGRACEAE—EVENING PRIMROSE FAMILY**

*Epilobium brachycarpum*—tall annual willowherb

*Epilobium ciliatum*—fringed willowherb

**POLYGONACEAE—BUCKWHEAT FAMILY**

- \* *Polygonum aviculare*—prostrate knotweed

- \* *Rumex crispus*—curly dock

- \* *Rumex dentatus*—toothed dock

- \* *Rumex pulcher*—fiddle dock

### RANUNCULACEAE—BUTTERCUP FAMILY

*Ranunculus aquatilis*—white water crowfoot

*Ranunculus sceleratus*—cursed buttercup

### ROSACEAE—ROSE FAMILY

\* *Rubus armeniacus*—Himalayan blackberry

### SALICACEAE—WILLOW FAMILY

*Populus fremontii*—Fremont cottonwood

*Salix gooddingii*—Goodding's willow

### SOLANACEAE—NIGHTSHADE FAMILY

\* *Solanum elaeagnifolium*—silverleaf nightshade

### VERBENACEAE—VERVAIN FAMILY

*Phyla nodiflora*—turkey tangle fogfruit

### VITACEAE—GRAPE FAMILY

*Vitis californica*—California wild grape

## MONOCOTS

### CYPERACEAE—SEDGE FAMILY

*Cyperus eragrostis*—tall flatsedge

*Eleocharis macrostachya*—pale spike rush

### JUNCACEAE—RUSH FAMILY

*Juncus balticus*—no common name

*Juncus effusus*—soft rush

### POACEAE—GRASS FAMILY

*Alopecurus saccatus*—Pacific foxtail

\* *Avena barbata*—slender oat

\* *Avena fatua*—wild oat

\* *Briza minor*—little quakinggrass

\* *Bromus diandrus*—ripgut brome

\* *Bromus hordeaceus*—soft brome

\* *Crypsis schoenoides*—swamp pricklegrass

\* *Cynodon dactylon*—Bermudagrass

\* *Elymus caput-medusae*—medusahead

\* *Festuca myuros*—rat-tail fescue

\* *Festuca perennis*—perennial rye grass



- \* *Gastridium phleoides*—nit grass
- \* *Hordeum marinum*—seaside barley
- \* *Hordeum murinum*—mouse barley
- \* *Melica californica*—California melicgrass
- \* *Phalaris aquatica*—Harding grass
- \* *Poa secunda*—onesided bluegrass
- \* *Polypogon monspeliensis*—annual rabbitsfoot grass

#### THEMIDACEAE—BRODIAEA FAMILY

*Brodiaea elegans*—harvest brodiaea

*Triteleia laxa*—Ithuriel's spear

#### TYPHACEAE—CATTAIL FAMILY

*Typha latifolia*—broadleaf cattail

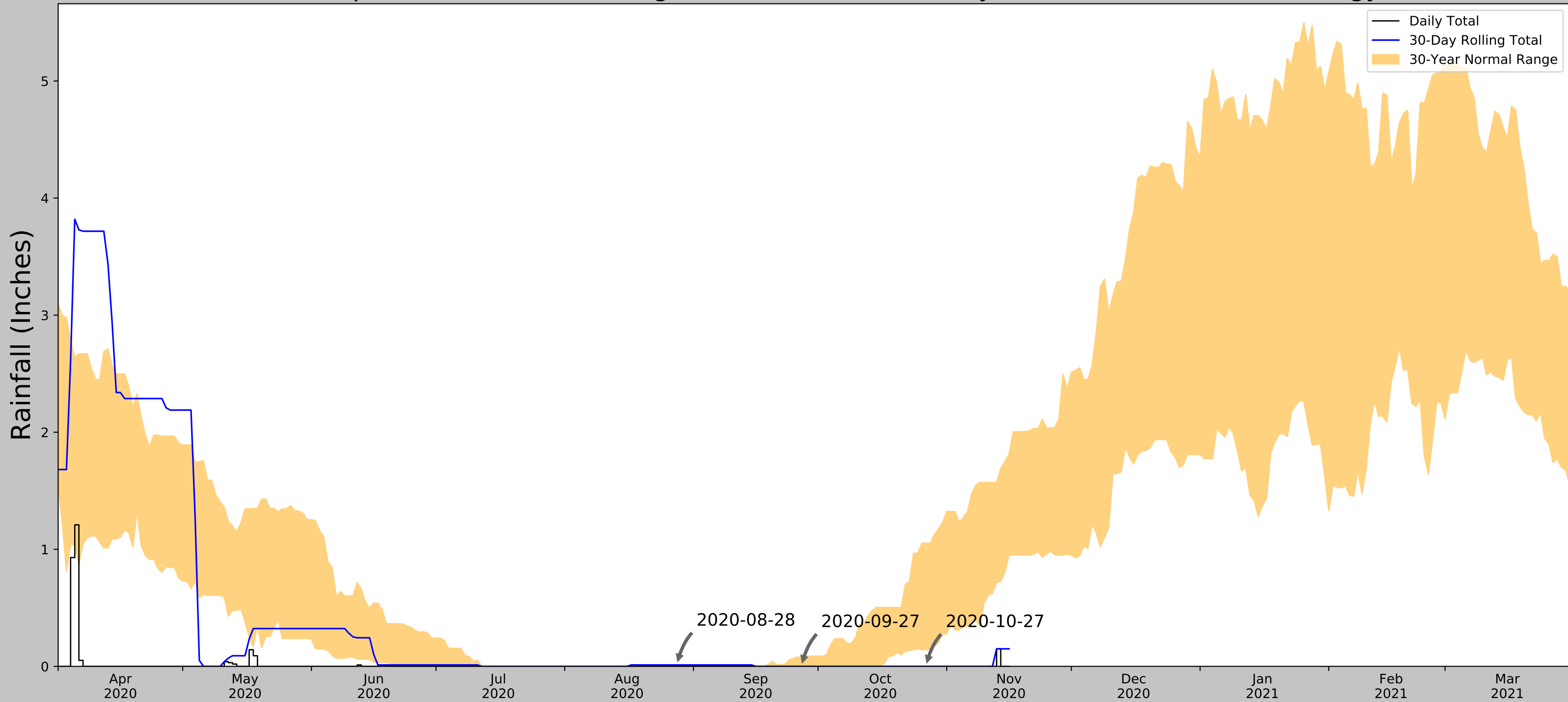
- \* signifies introduced (non-native) species

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# **Appendix D**

## Antecedent Precipitation Tool Output

# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



|                                  |                        |
|----------------------------------|------------------------|
| Coordinates                      | 38.472457, -121.182621 |
| Observation Date                 | 2020-10-27             |
| Elevation (ft)                   | 113.57                 |
| Drought Index (PDSI)             | Moderate drought       |
| WebWIMP H <sub>2</sub> O Balance | Dry Season             |

| 30 Days Ending | 30 <sup>th</sup> %ile (in) | 70 <sup>th</sup> %ile (in) | Observed (in) | Wetness Condition | Condition Value | Month Weight | Product                |
|----------------|----------------------------|----------------------------|---------------|-------------------|-----------------|--------------|------------------------|
| 2020-10-27     | 0.141732                   | 1.051575                   | 0.0           | Dry               | 1               | 3            | 3                      |
| 2020-09-27     | 0.0                        | 0.079134                   | 0.0           | Normal            | 2               | 2            | 4                      |
| 2020-08-28     | 0.0                        | 0.0                        | 0.011811      | Wet               | 3               | 1            | 3                      |
| Result         |                            |                            |               |                   |                 |              | Normal Conditions - 10 |

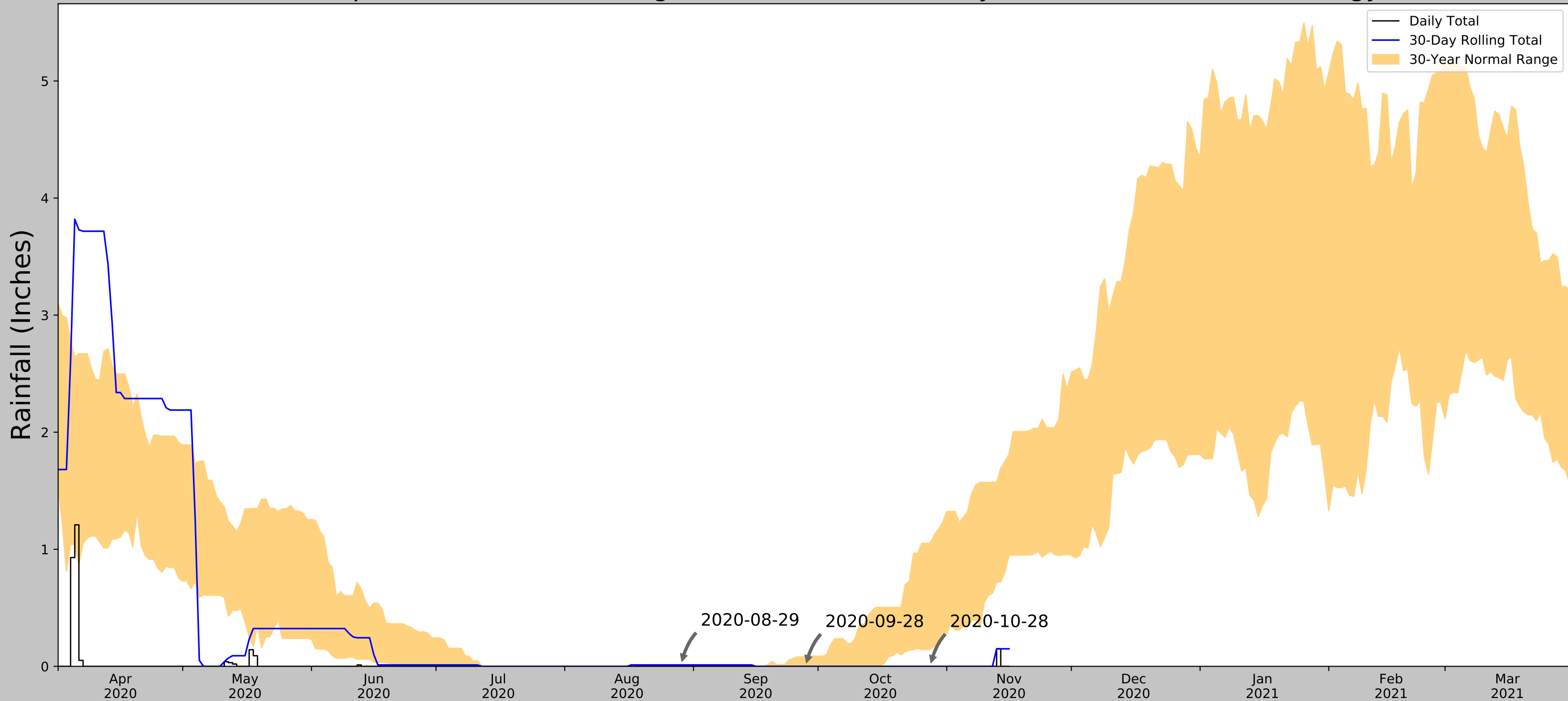
Figure and tables made by the  
**Antecedent Precipitation Tool**  
Version 1.0

Written by Jason Deters  
U.S. Army Corps of Engineers

| Weather Station Name  | Coordinates        | Elevation (ft) | Distance (mi) | Elevation Δ | Weighted Δ | Days (Normal) | Days (Antecedent) |
|-----------------------|--------------------|----------------|---------------|-------------|------------|---------------|-------------------|
| SACRAMENTO 5 ESE      | 38.5556, -121.4169 | 38.058         | 13.908        | 75.512      | 7.309      | 11352         | 89                |
| RANCHO CORDOVA 1.5 SE | 38.5804, -121.2812 | 104.003        | 9.166         | 9.567       | 4.212      | 1             | 0                 |
| CARMICHAEL 0.9 NE     | 38.6429, -121.3059 | 129.921        | 13.53         | 16.351      | 6.31       | 0             | 1                 |



# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



|                                  |                        |
|----------------------------------|------------------------|
| Coordinates                      | 38.472457, -121.182621 |
| Observation Date                 | 2020-10-28             |
| Elevation (ft)                   | 113.57                 |
| Drought Index (PDSI)             | Moderate drought       |
| WebWIMP H <sub>2</sub> O Balance | Dry Season             |

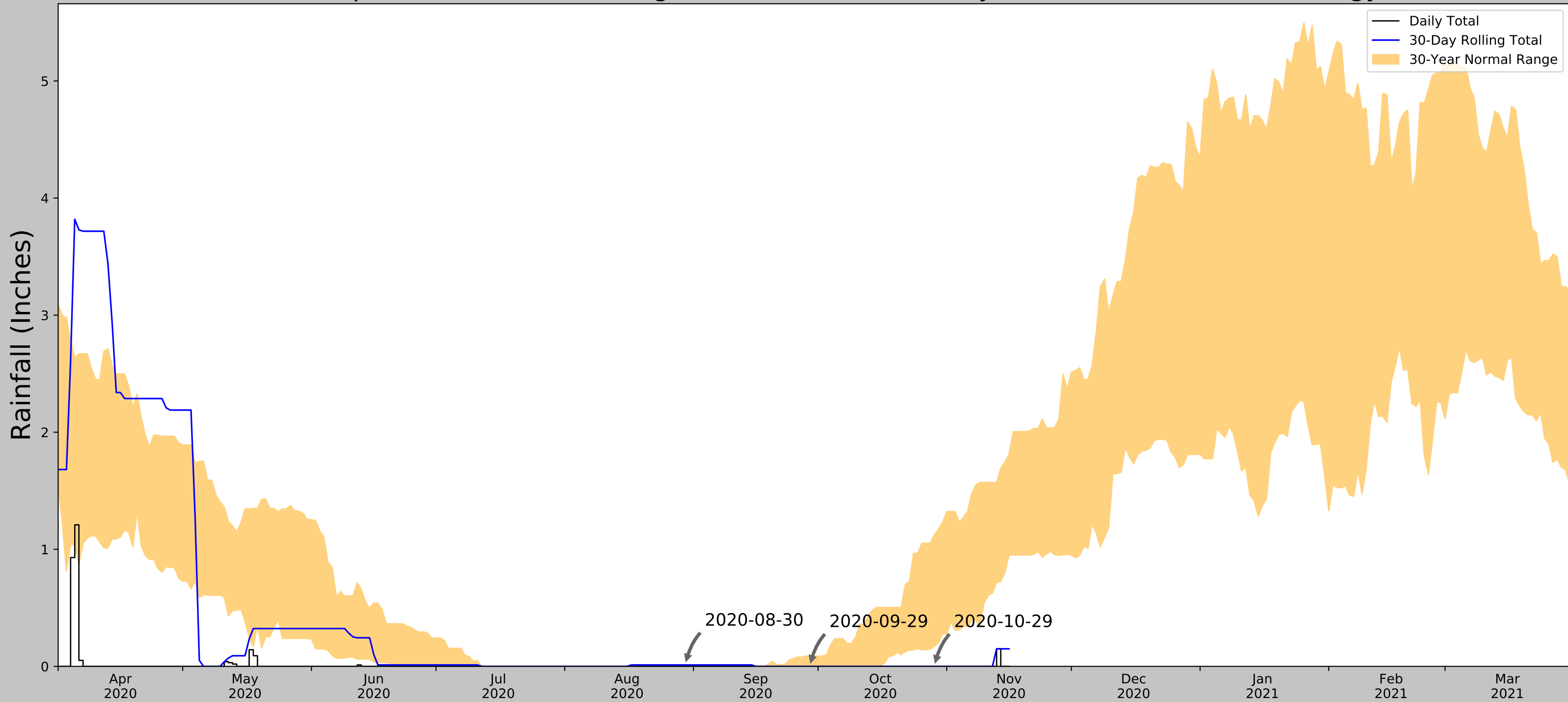
| 30 Days Ending | 30 <sup>th</sup> %ile (in) | 70 <sup>th</sup> %ile (in) | Observed (in) | Wetness Condition | Condition Value | Month Weight | Product                |
|----------------|----------------------------|----------------------------|---------------|-------------------|-----------------|--------------|------------------------|
| 2020-10-28     | 0.147244                   | 1.051575                   | 0.0           | Dry               | 1               | 3            | 3                      |
| 2020-09-28     | 0.0                        | 0.087402                   | 0.0           | Normal            | 2               | 2            | 4                      |
| 2020-08-29     | 0.0                        | 0.0                        | 0.011811      | Wet               | 3               | 1            | 3                      |
| Result         |                            |                            |               |                   |                 |              | Normal Conditions - 10 |

Figure and tables made by the  
**Antecedent Precipitation Tool**  
Version 1.0

Written by Jason Deters  
U.S. Army Corps of Engineers

| Weather Station Name  | Coordinates        | Elevation (ft) | Distance (mi) | Elevation Δ | Weighted Δ | Days (Normal) | Days (Antecedent) |
|-----------------------|--------------------|----------------|---------------|-------------|------------|---------------|-------------------|
| SACRAMENTO 5 ESE      | 38.5556, -121.4169 | 38.058         | 13.908        | 75.512      | 7.309      | 11352         | 88                |
| RANCHO CORDOVA 1.5 SE | 38.5804, -121.2812 | 104.003        | 9.166         | 9.567       | 4.212      | 1             | 0                 |
| CARMICHAEL 0.9 NE     | 38.6429, -121.3059 | 129.921        | 13.53         | 16.351      | 6.31       | 0             | 2                 |

# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



|                                  |                        |
|----------------------------------|------------------------|
| Coordinates                      | 38.472457, -121.182621 |
| Observation Date                 | 2020-10-29             |
| Elevation (ft)                   | 113.57                 |
| Drought Index (PDSI)             | Moderate drought       |
| WebWIMP H <sub>2</sub> O Balance | Dry Season             |

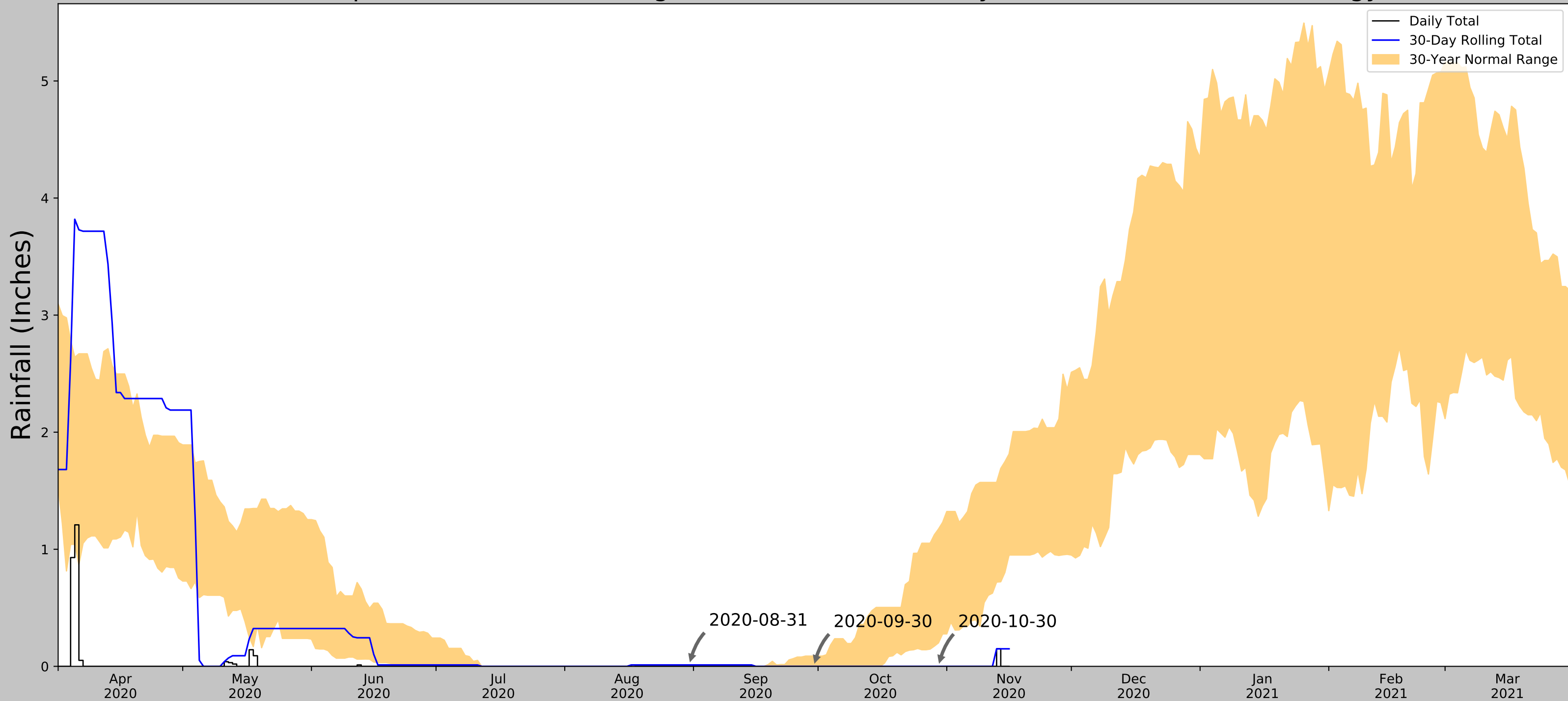
| 30 Days Ending | 30 <sup>th</sup> %ile (in) | 70 <sup>th</sup> %ile (in) | Observed (in) | Wetness Condition | Condition Value | Month Weight | Product                |
|----------------|----------------------------|----------------------------|---------------|-------------------|-----------------|--------------|------------------------|
| 2020-10-29     | 0.172441                   | 1.123228                   | 0.0           | Dry               | 1               | 3            | 3                      |
| 2020-09-29     | 0.0                        | 0.087402                   | 0.0           | Normal            | 2               | 2            | 4                      |
| 2020-08-30     | 0.0                        | 0.0                        | 0.011811      | Wet               | 3               | 1            | 3                      |
| Result         |                            |                            |               |                   |                 |              | Normal Conditions - 10 |

Figure and tables made by the  
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Written by Jason Deters  
U.S. Army Corps of Engineers

| Weather Station Name  | Coordinates        | Elevation (ft) | Distance (mi) | Elevation Δ | Weighted Δ | Days (Normal) | Days (Antecedent) |
|-----------------------|--------------------|----------------|---------------|-------------|------------|---------------|-------------------|
| SACRAMENTO 5 ESE      | 38.5556, -121.4169 | 38.058         | 13.908        | 75.512      | 7.309      | 11352         | 87                |
| RANCHO CORDOVA 1.5 SE | 38.5804, -121.2812 | 104.003        | 9.166         | 9.567       | 4.212      | 1             | 0                 |
| CARMICHAEL 0.9 NE     | 38.6429, -121.3059 | 129.921        | 13.53         | 16.351      | 6.31       | 0             | 3                 |

# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



|                                  |                        |
|----------------------------------|------------------------|
| Coordinates                      | 38.472457, -121.182621 |
| Observation Date                 | 2020-10-30             |
| Elevation (ft)                   | 113.57                 |
| Drought Index (PDSI)             | Moderate drought       |
| WebWIMP H <sub>2</sub> O Balance | Dry Season             |

| 30 Days Ending | 30 <sup>th</sup> %ile (in) | 70 <sup>th</sup> %ile (in) | Observed (in) | Wetness Condition | Condition Value | Month Weight | Product                |
|----------------|----------------------------|----------------------------|---------------|-------------------|-----------------|--------------|------------------------|
| 2020-10-30     | 0.200394                   | 1.172441                   | 0.0           | Dry               | 1               | 3            | 3                      |
| 2020-09-30     | 0.0                        | 0.087402                   | 0.0           | Normal            | 2               | 2            | 4                      |
| 2020-08-31     | 0.0                        | 0.0                        | 0.011811      | Wet               | 3               | 1            | 3                      |
| Result         |                            |                            |               |                   |                 |              | Normal Conditions - 10 |

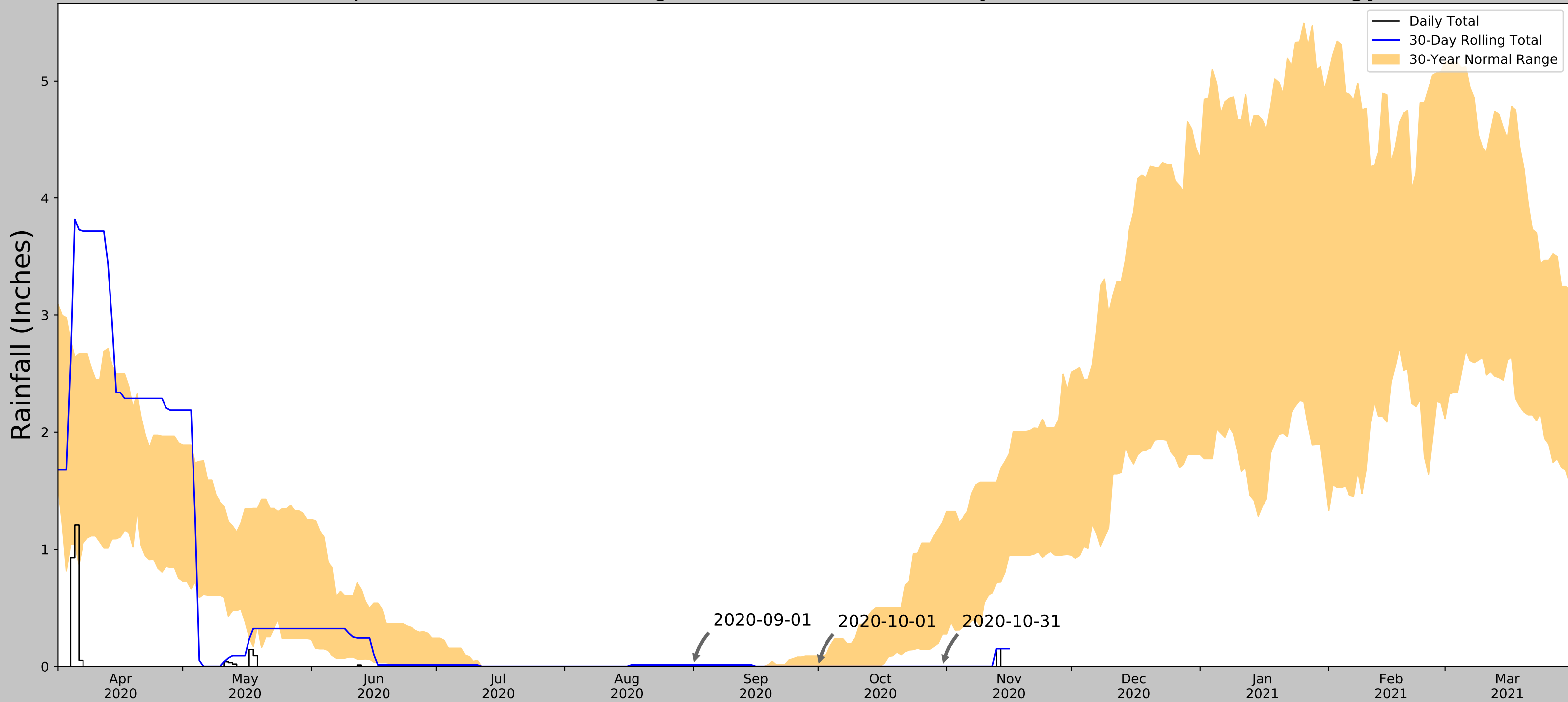
Figure and tables made by the  
**Antecedent Precipitation Tool**  
Version 1.0

Written by Jason Deters  
U.S. Army Corps of Engineers

| Weather Station Name  | Coordinates        | Elevation (ft) | Distance (mi) | Elevation Δ | Weighted Δ | Days (Normal) | Days (Antecedent) |
|-----------------------|--------------------|----------------|---------------|-------------|------------|---------------|-------------------|
| SACRAMENTO 5 ESE      | 38.5556, -121.4169 | 38.058         | 13.908        | 75.512      | 7.309      | 11352         | 86                |
| RANCHO CORDOVA 1.5 SE | 38.5804, -121.2812 | 104.003        | 9.166         | 9.567       | 4.212      | 1             | 0                 |
| CARMICHAEL 0.9 NE     | 38.6429, -121.3059 | 129.921        | 13.53         | 16.351      | 6.31       | 0             | 4                 |



# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



|                                  |                        |
|----------------------------------|------------------------|
| Coordinates                      | 38.472457, -121.182621 |
| Observation Date                 | 2020-10-31             |
| Elevation (ft)                   | 113.57                 |
| Drought Index (PDSI)             | Moderate drought       |
| WebWIMP H <sub>2</sub> O Balance | Dry Season             |

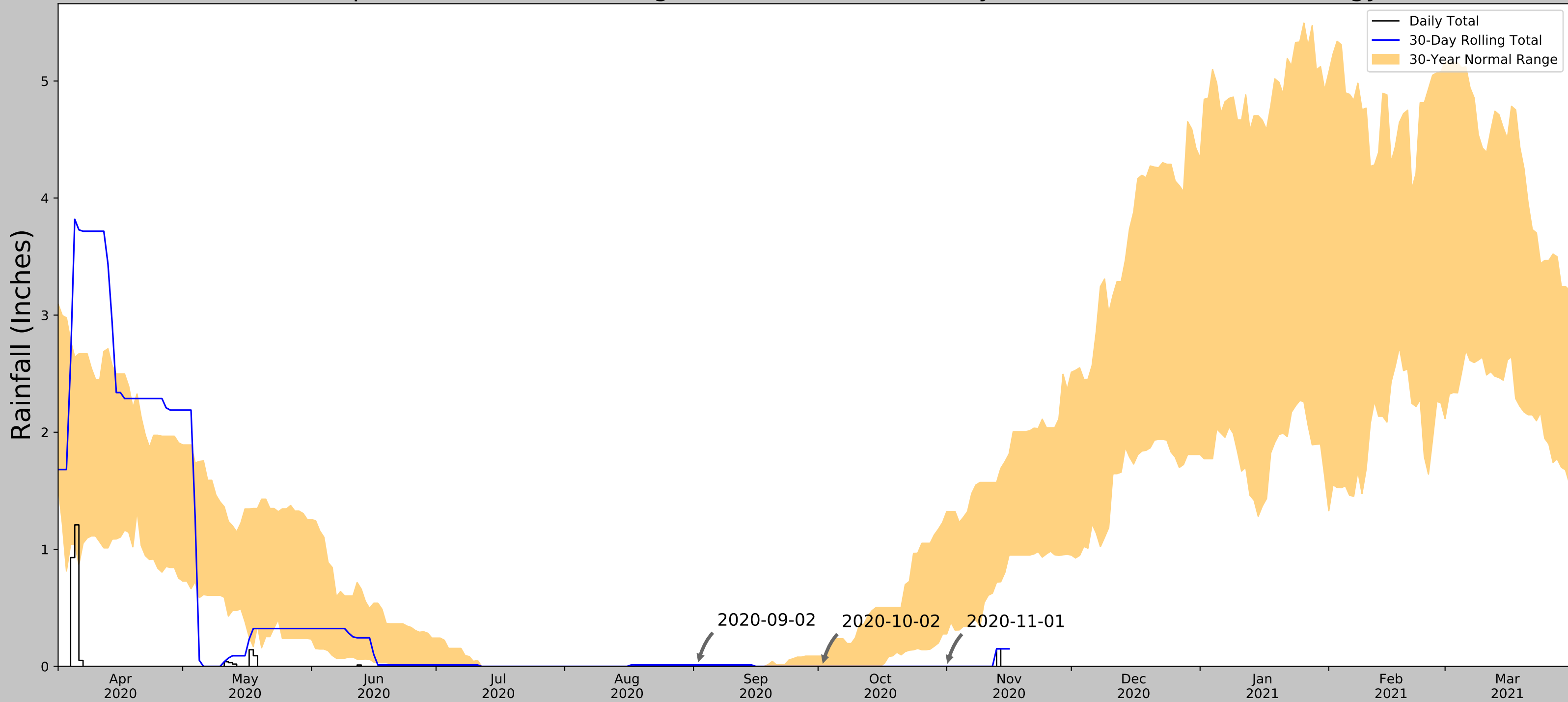
| 30 Days Ending | 30 <sup>th</sup> %ile (in) | 70 <sup>th</sup> %ile (in) | Observed (in) | Wetness Condition | Condition Value | Month Weight | Product                |
|----------------|----------------------------|----------------------------|---------------|-------------------|-----------------|--------------|------------------------|
| 2020-10-31     | 0.277165                   | 1.229528                   | 0.0           | Dry               | 1               | 3            | 3                      |
| 2020-10-01     | 0.0                        | 0.087402                   | 0.0           | Normal            | 2               | 2            | 4                      |
| 2020-09-01     | 0.0                        | 0.0                        | 0.011811      | Wet               | 3               | 1            | 3                      |
| Result         |                            |                            |               |                   |                 |              | Normal Conditions - 10 |

Figure and tables made by the  
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| Weather Station Name  | Coordinates        | Elevation (ft) | Distance (mi) | Elevation Δ | Weighted Δ | Days (Normal) | Days (Antecedent) |
|-----------------------|--------------------|----------------|---------------|-------------|------------|---------------|-------------------|
| SACRAMENTO 5 ESE      | 38.5556, -121.4169 | 38.058         | 13.908        | 75.512      | 7.309      | 11352         | 85                |
| RANCHO CORDOVA 1.5 SE | 38.5804, -121.2812 | 104.003        | 9.166         | 9.567       | 4.212      | 1             | 0                 |
| CARMICHAEL 0.9 NE     | 38.6429, -121.3059 | 129.921        | 13.53         | 16.351      | 6.31       | 0             | 5                 |

# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



|                                  |                            |
|----------------------------------|----------------------------|
| Coordinates                      | 38.472457, -121.182621     |
| Observation Date                 | 2020-11-01                 |
| Elevation (ft)                   | 113.57                     |
| Drought Index (PDSI)             | Moderate drought (2020-10) |
| WebWIMP H <sub>2</sub> O Balance | Wet Season                 |

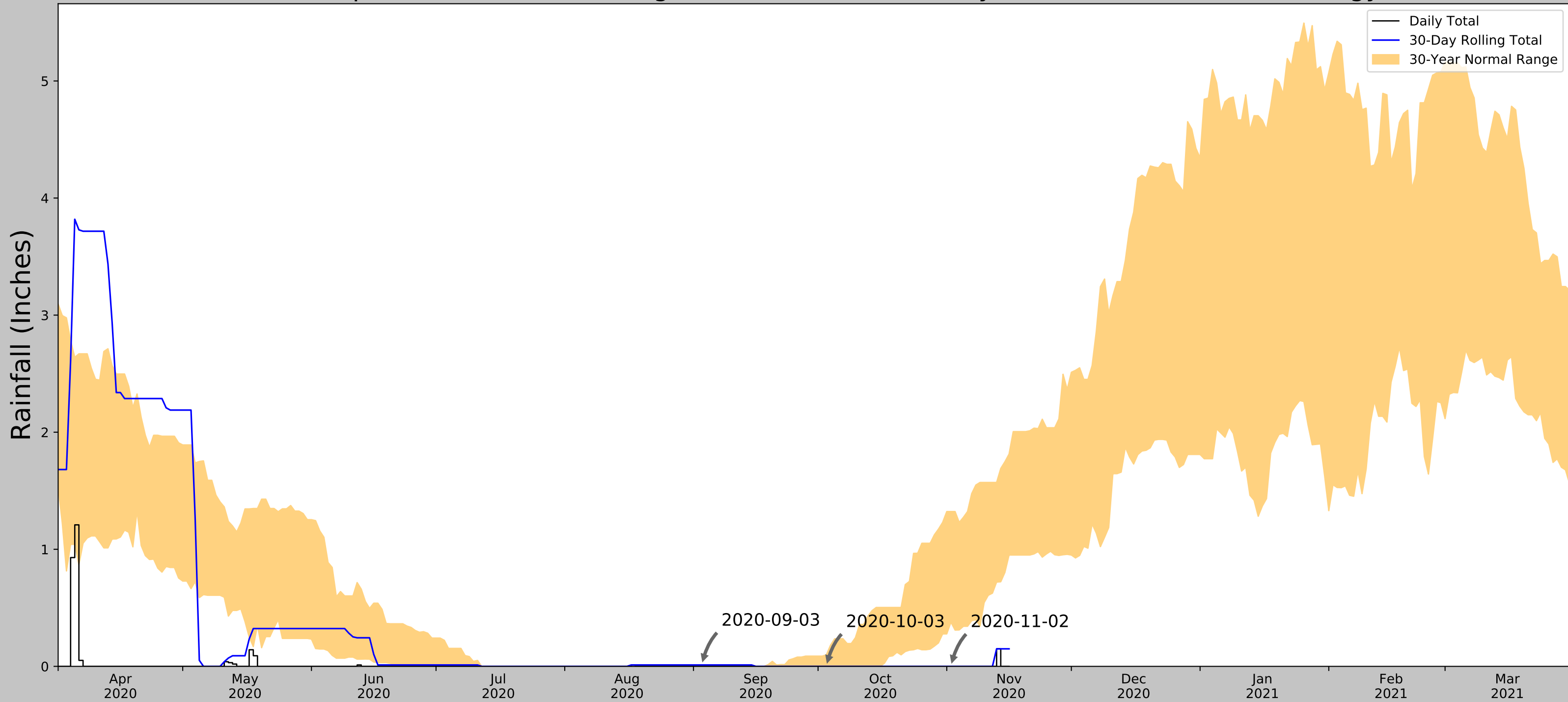
| 30 Days Ending | 30 <sup>th</sup> %ile (in) | 70 <sup>th</sup> %ile (in) | Observed (in) | Wetness Condition | Condition Value | Month Weight | Product                |
|----------------|----------------------------|----------------------------|---------------|-------------------|-----------------|--------------|------------------------|
| 2020-11-01     | 0.277165                   | 1.322441                   | 0.0           | Dry               | 1               | 3            | 3                      |
| 2020-10-02     | 0.0                        | 0.087402                   | 0.0           | Normal            | 2               | 2            | 4                      |
| 2020-09-02     | 0.0                        | 0.0                        | 0.011811      | Wet               | 3               | 1            | 3                      |
| Result         |                            |                            |               |                   |                 |              | Normal Conditions - 10 |

Figure and tables made by the  
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Version 1.0

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U.S. Army Corps of Engineers

| Weather Station Name  | Coordinates        | Elevation (ft) | Distance (mi) | Elevation Δ | Weighted Δ | Days (Normal) | Days (Antecedent) |
|-----------------------|--------------------|----------------|---------------|-------------|------------|---------------|-------------------|
| SACRAMENTO 5 ESE      | 38.5556, -121.4169 | 38.058         | 13.908        | 75.512      | 7.309      | 11352         | 85                |
| RANCHO CORDOVA 1.5 SE | 38.5804, -121.2812 | 104.003        | 9.166         | 9.567       | 4.212      | 1             | 0                 |
| CARMICHAEL 0.9 NE     | 38.6429, -121.3059 | 129.921        | 13.53         | 16.351      | 6.31       | 0             | 5                 |

# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



|                                  |                            |
|----------------------------------|----------------------------|
| Coordinates                      | 38.472457, -121.182621     |
| Observation Date                 | 2020-11-02                 |
| Elevation (ft)                   | 113.57                     |
| Drought Index (PDSI)             | Moderate drought (2020-10) |
| WebWIMP H <sub>2</sub> O Balance | Wet Season                 |

| 30 Days Ending | 30 <sup>th</sup> %ile (in) | 70 <sup>th</sup> %ile (in) | Observed (in) | Wetness Condition | Condition Value | Month Weight | Product                |
|----------------|----------------------------|----------------------------|---------------|-------------------|-----------------|--------------|------------------------|
| 2020-11-02     | 0.377953                   | 1.322441                   | 0.0           | Dry               | 1               | 3            | 3                      |
| 2020-10-03     | 0.0                        | 0.098425                   | 0.0           | Normal            | 2               | 2            | 4                      |
| 2020-09-03     | 0.0                        | 0.0                        | 0.011811      | Wet               | 3               | 1            | 3                      |
| Result         |                            |                            |               |                   |                 |              | Normal Conditions - 10 |

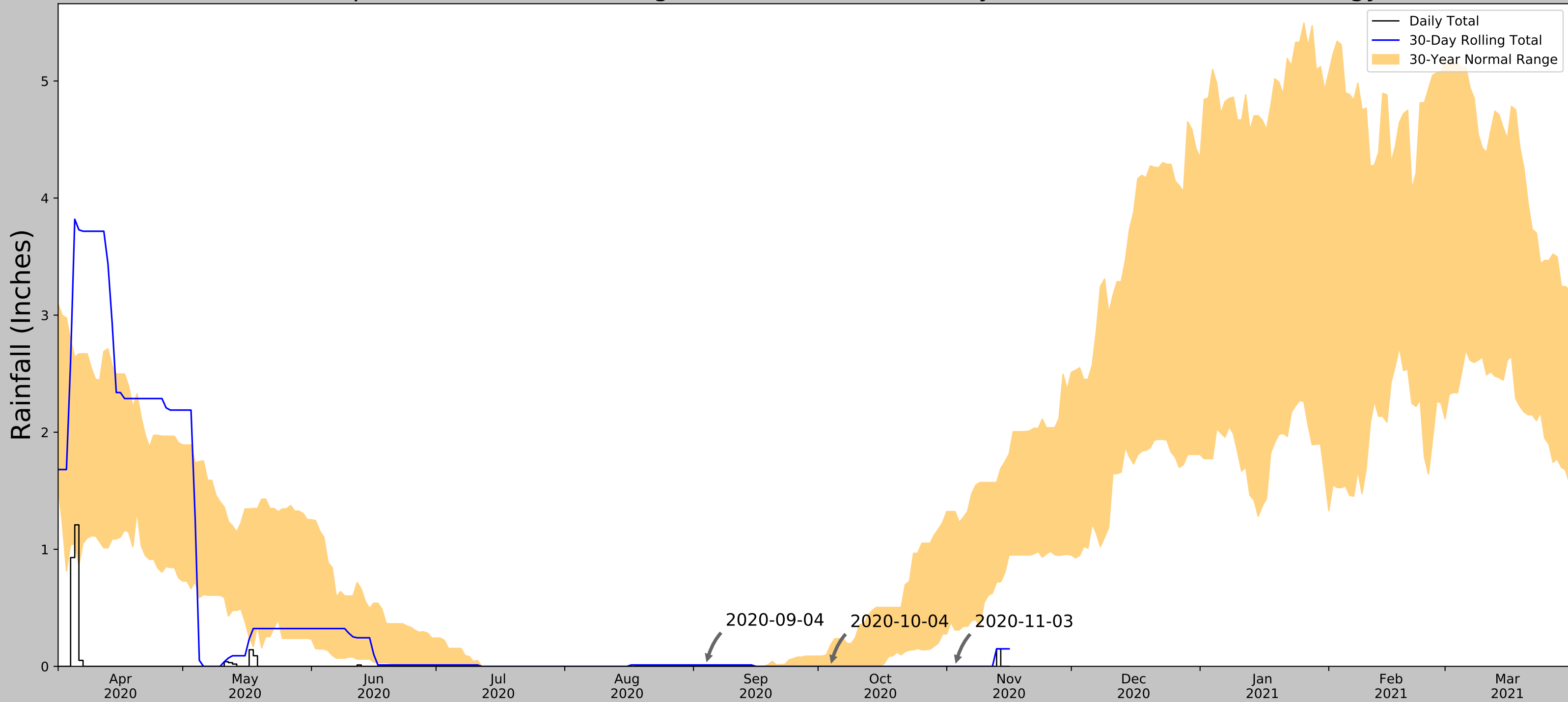
Figure and tables made by the  
**Antecedent Precipitation Tool**  
Version 1.0

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U.S. Army Corps of Engineers

| Weather Station Name  | Coordinates        | Elevation (ft) | Distance (mi) | Elevation Δ | Weighted Δ | Days (Normal) | Days (Antecedent) |
|-----------------------|--------------------|----------------|---------------|-------------|------------|---------------|-------------------|
| SACRAMENTO 5 ESE      | 38.5556, -121.4169 | 38.058         | 13.908        | 75.512      | 7.309      | 11352         | 85                |
| RANCHO CORDOVA 1.5 SE | 38.5804, -121.2812 | 104.003        | 9.166         | 9.567       | 4.212      | 1             | 0                 |
| CARMICHAEL 0.9 NE     | 38.6429, -121.3059 | 129.921        | 13.53         | 16.351      | 6.31       | 0             | 5                 |



# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



|                                  |                            |
|----------------------------------|----------------------------|
| Coordinates                      | 38.472457, -121.182621     |
| Observation Date                 | 2020-11-03                 |
| Elevation (ft)                   | 113.57                     |
| Drought Index (PDSI)             | Moderate drought (2020-10) |
| WebWIMP H <sub>2</sub> O Balance | Wet Season                 |

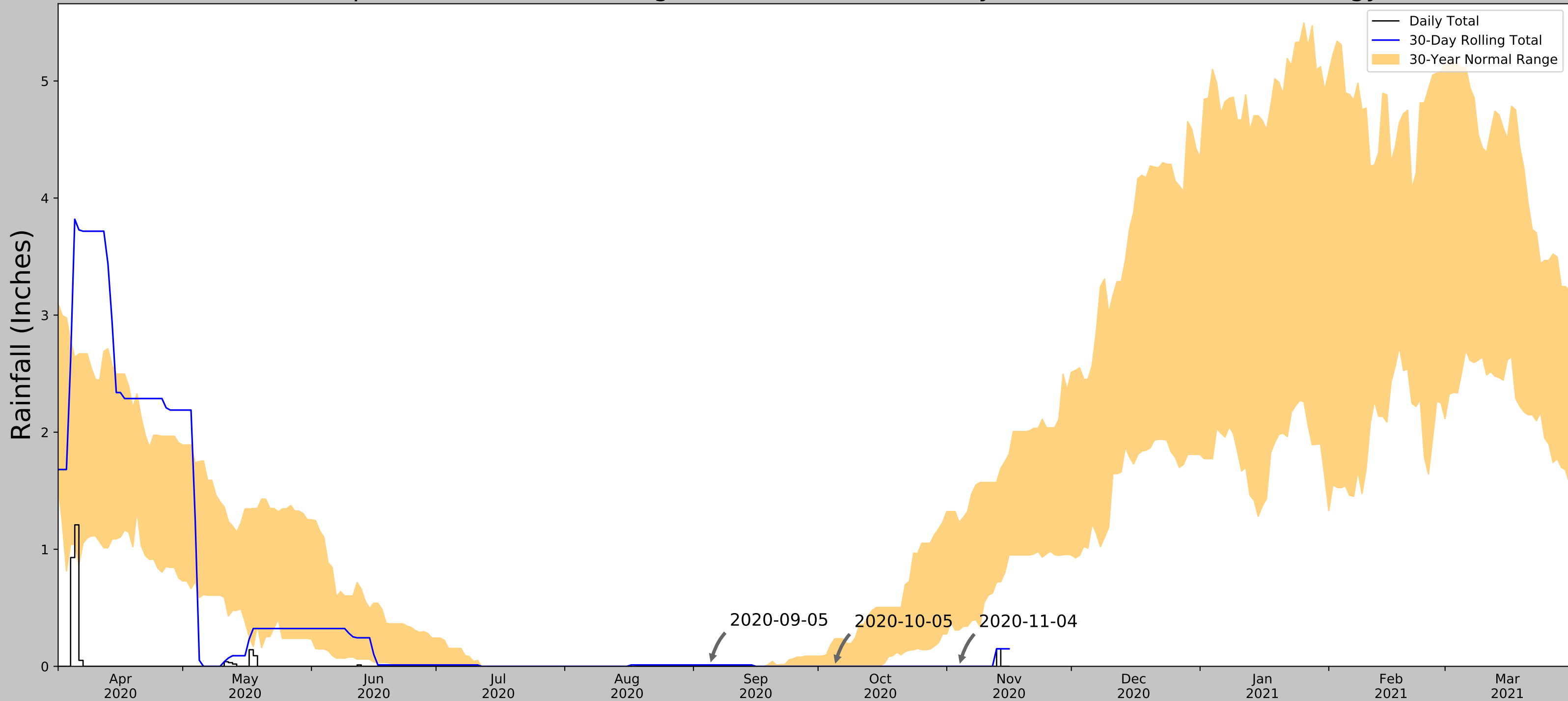
| 30 Days Ending | 30 <sup>th</sup> %ile (in) | 70 <sup>th</sup> %ile (in) | Observed (in) | Wetness Condition | Condition Value | Month Weight | Product                |
|----------------|----------------------------|----------------------------|---------------|-------------------|-----------------|--------------|------------------------|
| 2020-11-03     | 0.309843                   | 1.322441                   | 0.0           | Dry               | 1               | 3            | 3                      |
| 2020-10-04     | 0.0                        | 0.180709                   | 0.0           | Normal            | 2               | 2            | 4                      |
| 2020-09-04     | 0.0                        | 0.0                        | 0.011811      | Wet               | 3               | 1            | 3                      |
| Result         |                            |                            |               |                   |                 |              | Normal Conditions - 10 |

Figure and tables made by the  
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U.S. Army Corps of Engineers

| Weather Station Name  | Coordinates        | Elevation (ft) | Distance (mi) | Elevation Δ | Weighted Δ | Days (Normal) | Days (Antecedent) |
|-----------------------|--------------------|----------------|---------------|-------------|------------|---------------|-------------------|
| SACRAMENTO 5 ESE      | 38.5556, -121.4169 | 38.058         | 13.908        | 75.512      | 7.309      | 11352         | 85                |
| RANCHO CORDOVA 1.5 SE | 38.5804, -121.2812 | 104.003        | 9.166         | 9.567       | 4.212      | 1             | 0                 |
| CARMICHAEL 0.9 NE     | 38.6429, -121.3059 | 129.921        | 13.53         | 16.351      | 6.31       | 0             | 5                 |

# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



|                                  |                            |
|----------------------------------|----------------------------|
| Coordinates                      | 38.472457, -121.182621     |
| Observation Date                 | 2020-11-04                 |
| Elevation (ft)                   | 113.57                     |
| Drought Index (PDSI)             | Moderate drought (2020-10) |
| WebWIMP H <sub>2</sub> O Balance | Wet Season                 |

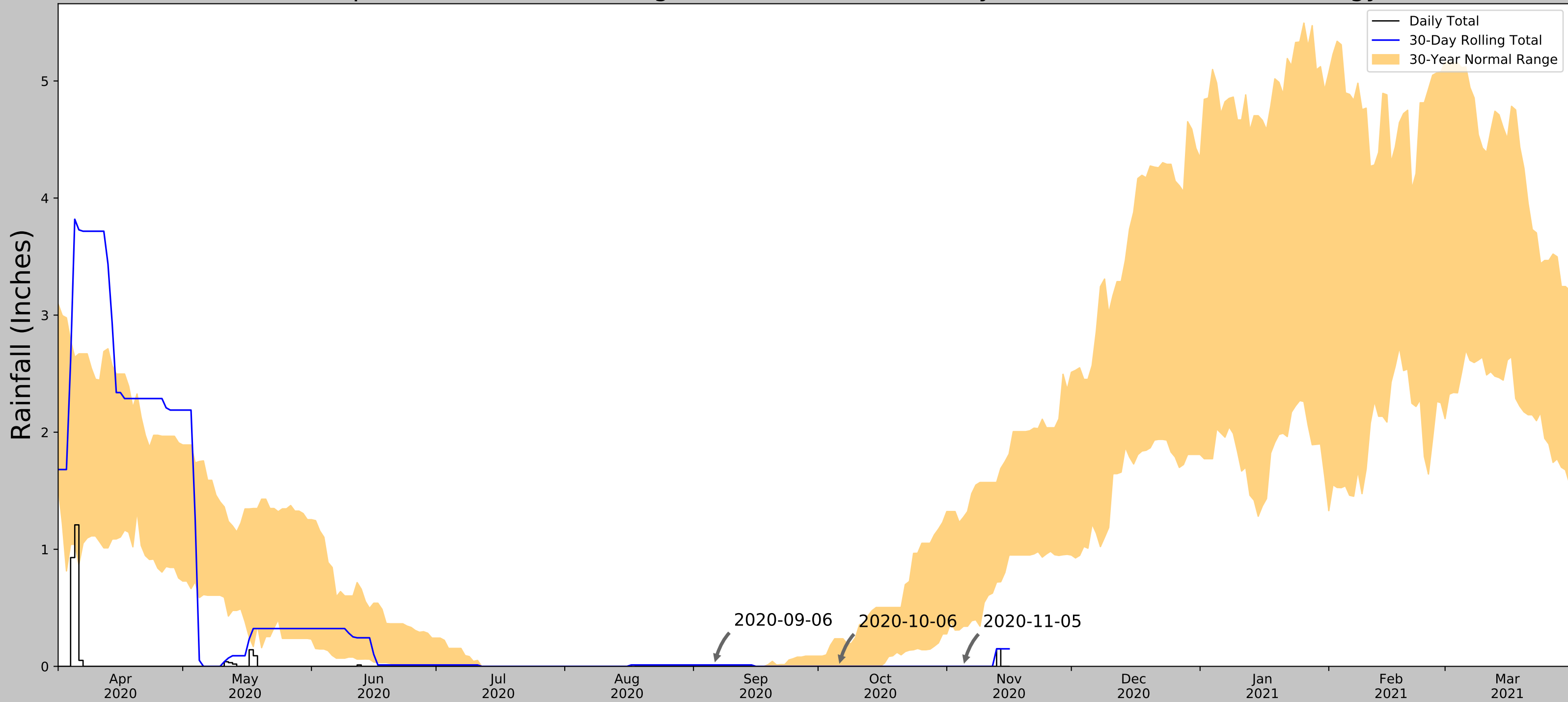
| 30 Days Ending | 30 <sup>th</sup> %ile (in) | 70 <sup>th</sup> %ile (in) | Observed (in) | Wetness Condition | Condition Value | Month Weight | Product                |
|----------------|----------------------------|----------------------------|---------------|-------------------|-----------------|--------------|------------------------|
| 2020-11-04     | 0.311024                   | 1.229528                   | 0.0           | Dry               | 1               | 3            | 3                      |
| 2020-10-05     | 0.0                        | 0.235827                   | 0.0           | Normal            | 2               | 2            | 4                      |
| 2020-09-05     | 0.0                        | 0.0                        | 0.011811      | Wet               | 3               | 1            | 3                      |
| Result         |                            |                            |               |                   |                 |              | Normal Conditions - 10 |

Figure and tables made by the  
**Antecedent Precipitation Tool**  
Version 1.0

Written by Jason Deters  
U.S. Army Corps of Engineers

| Weather Station Name  | Coordinates        | Elevation (ft) | Distance (mi) | Elevation Δ | Weighted Δ | Days (Normal) | Days (Antecedent) |
|-----------------------|--------------------|----------------|---------------|-------------|------------|---------------|-------------------|
| SACRAMENTO 5 ESE      | 38.5556, -121.4169 | 38.058         | 13.908        | 75.512      | 7.309      | 11352         | 85                |
| RANCHO CORDOVA 1.5 SE | 38.5804, -121.2812 | 104.003        | 9.166         | 9.567       | 4.212      | 1             | 0                 |
| CARMICHAEL 0.9 NE     | 38.6429, -121.3059 | 129.921        | 13.53         | 16.351      | 6.31       | 0             | 5                 |

# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



|                                  |                            |
|----------------------------------|----------------------------|
| Coordinates                      | 38.472457, -121.182621     |
| Observation Date                 | 2020-11-05                 |
| Elevation (ft)                   | 113.57                     |
| Drought Index (PDSI)             | Moderate drought (2020-10) |
| WebWIMP H <sub>2</sub> O Balance | Wet Season                 |

| 30 Days Ending | 30 <sup>th</sup> %ile (in) | 70 <sup>th</sup> %ile (in) | Observed (in) | Wetness Condition | Condition Value | Month Weight | Product                |
|----------------|----------------------------|----------------------------|---------------|-------------------|-----------------|--------------|------------------------|
| 2020-11-05     | 0.342126                   | 1.272835                   | 0.0           | Dry               | 1               | 3            | 3                      |
| 2020-10-06     | 0.0                        | 0.235827                   | 0.0           | Normal            | 2               | 2            | 4                      |
| 2020-09-06     | 0.0                        | 0.0                        | 0.011811      | Wet               | 3               | 1            | 3                      |
| Result         |                            |                            |               |                   |                 |              | Normal Conditions - 10 |

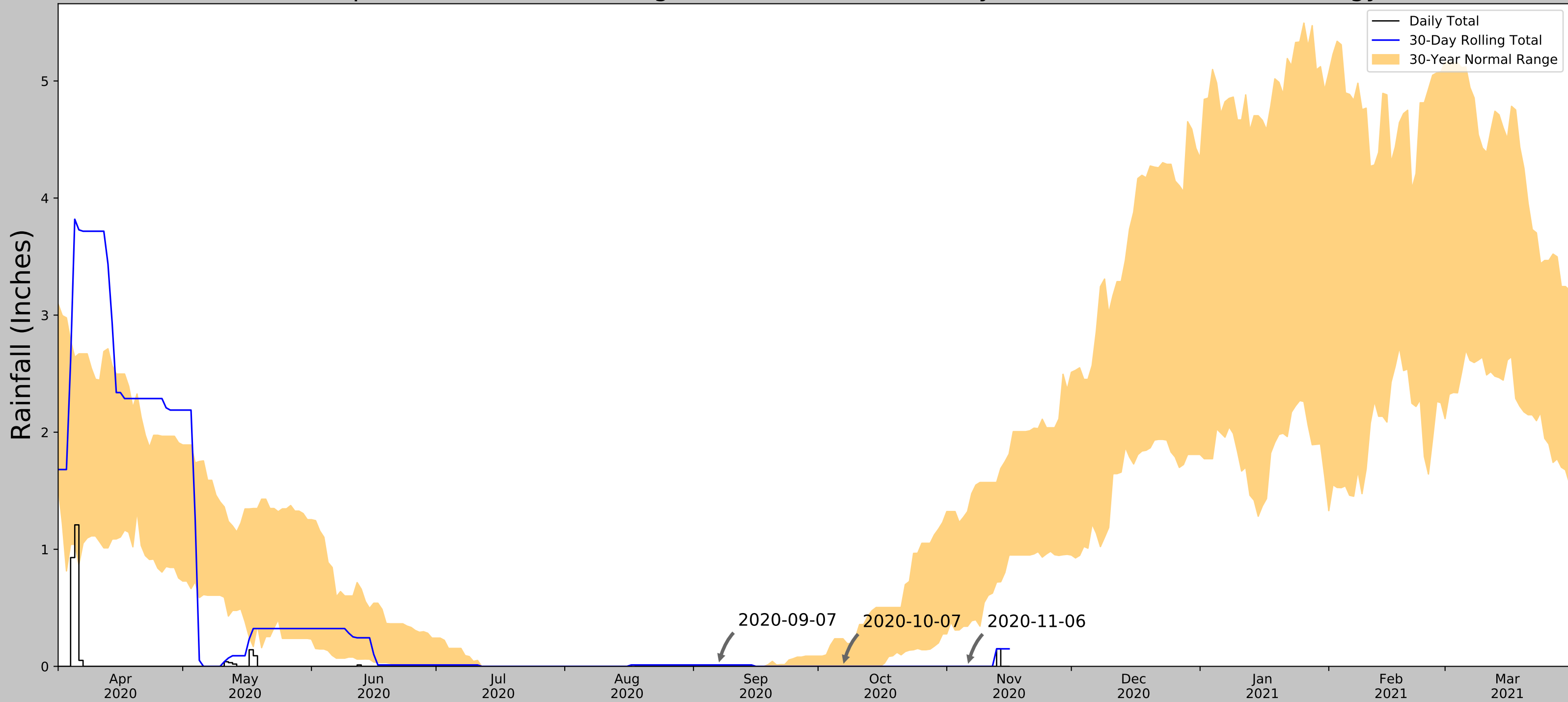
Figure and tables made by the  
**Antecedent Precipitation Tool**  
Version 1.0

Written by Jason Deters  
U.S. Army Corps of Engineers

| Weather Station Name  | Coordinates        | Elevation (ft) | Distance (mi) | Elevation Δ | Weighted Δ | Days (Normal) | Days (Antecedent) |
|-----------------------|--------------------|----------------|---------------|-------------|------------|---------------|-------------------|
| SACRAMENTO 5 ESE      | 38.5556, -121.4169 | 38.058         | 13.908        | 75.512      | 7.309      | 11352         | 85                |
| RANCHO CORDOVA 1.5 SE | 38.5804, -121.2812 | 104.003        | 9.166         | 9.567       | 4.212      | 1             | 0                 |
| CARMICHAEL 0.9 NE     | 38.6429, -121.3059 | 129.921        | 13.53         | 16.351      | 6.31       | 0             | 5                 |



# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



|                                  |                            |
|----------------------------------|----------------------------|
| Coordinates                      | 38.472457, -121.182621     |
| Observation Date                 | 2020-11-06                 |
| Elevation (ft)                   | 113.57                     |
| Drought Index (PDSI)             | Moderate drought (2020-10) |
| WebWIMP H <sub>2</sub> O Balance | Wet Season                 |

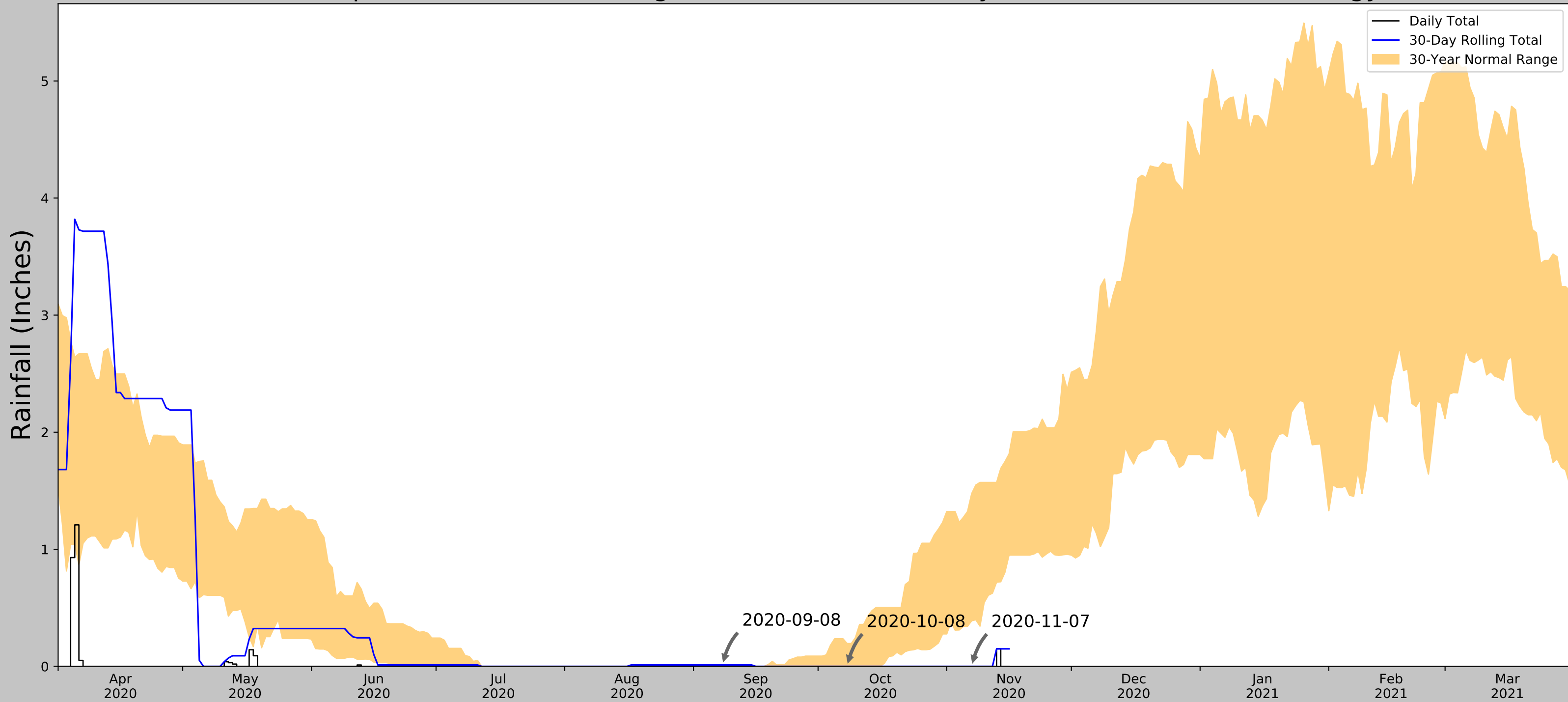
| 30 Days Ending | 30 <sup>th</sup> %ile (in) | 70 <sup>th</sup> %ile (in) | Observed (in) | Wetness Condition | Condition Value | Month Weight | Product                |
|----------------|----------------------------|----------------------------|---------------|-------------------|-----------------|--------------|------------------------|
| 2020-11-06     | 0.342126                   | 1.322441                   | 0.0           | Dry               | 1               | 3            | 3                      |
| 2020-10-07     | 0.0                        | 0.235827                   | 0.0           | Normal            | 2               | 2            | 4                      |
| 2020-09-07     | 0.0                        | 0.0                        | 0.011811      | Wet               | 3               | 1            | 3                      |
| Result         |                            |                            |               |                   |                 |              | Normal Conditions - 10 |

Figure and tables made by the  
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Written by Jason Deters  
U.S. Army Corps of Engineers

| Weather Station Name  | Coordinates        | Elevation (ft) | Distance (mi) | Elevation Δ | Weighted Δ | Days (Normal) | Days (Antecedent) |
|-----------------------|--------------------|----------------|---------------|-------------|------------|---------------|-------------------|
| SACRAMENTO 5 ESE      | 38.5556, -121.4169 | 38.058         | 13.908        | 75.512      | 7.309      | 11352         | 85                |
| RANCHO CORDOVA 1.5 SE | 38.5804, -121.2812 | 104.003        | 9.166         | 9.567       | 4.212      | 1             | 0                 |
| CARMICHAEL 0.9 NE     | 38.6429, -121.3059 | 129.921        | 13.53         | 16.351      | 6.31       | 0             | 5                 |

# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



|                                  |                            |
|----------------------------------|----------------------------|
| Coordinates                      | 38.472457, -121.182621     |
| Observation Date                 | 2020-11-07                 |
| Elevation (ft)                   | 113.57                     |
| Drought Index (PDSI)             | Moderate drought (2020-10) |
| WebWIMP H <sub>2</sub> O Balance | Wet Season                 |

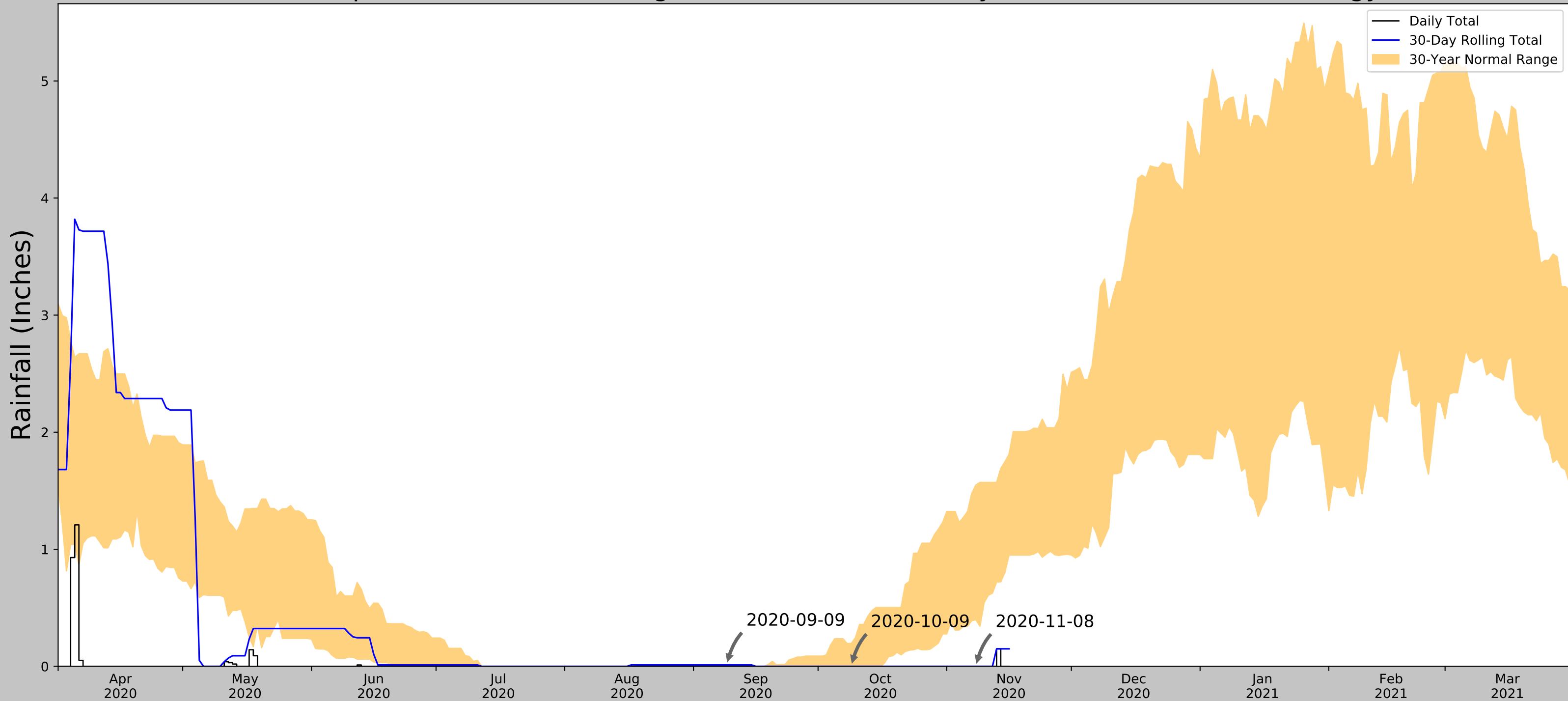
| 30 Days Ending | 30 <sup>th</sup> %ile (in) | 70 <sup>th</sup> %ile (in) | Observed (in) | Wetness Condition | Condition Value | Month Weight | Product                |
|----------------|----------------------------|----------------------------|---------------|-------------------|-----------------|--------------|------------------------|
| 2020-11-07     | 0.389764                   | 1.475591                   | 0.0           | Dry               | 1               | 3            | 3                      |
| 2020-10-08     | 0.0                        | 0.194882                   | 0.0           | Normal            | 2               | 2            | 4                      |
| 2020-09-08     | 0.0                        | 0.0                        | 0.011811      | Wet               | 3               | 1            | 3                      |
| Result         |                            |                            |               |                   |                 |              | Normal Conditions - 10 |

Figure and tables made by the  
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| Weather Station Name  | Coordinates        | Elevation (ft) | Distance (mi) | Elevation Δ | Weighted Δ | Days (Normal) | Days (Antecedent) |
|-----------------------|--------------------|----------------|---------------|-------------|------------|---------------|-------------------|
| SACRAMENTO 5 ESE      | 38.5556, -121.4169 | 38.058         | 13.908        | 75.512      | 7.309      | 11352         | 85                |
| RANCHO CORDOVA 1.5 SE | 38.5804, -121.2812 | 104.003        | 9.166         | 9.567       | 4.212      | 1             | 0                 |
| CARMICHAEL 0.9 NE     | 38.6429, -121.3059 | 129.921        | 13.53         | 16.351      | 6.31       | 0             | 5                 |

# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



|                                  |                            |
|----------------------------------|----------------------------|
| Coordinates                      | 38.472457, -121.182621     |
| Observation Date                 | 2020-11-08                 |
| Elevation (ft)                   | 113.57                     |
| Drought Index (PDSI)             | Moderate drought (2020-10) |
| WebWIMP H <sub>2</sub> O Balance | Wet Season                 |

| 30 Days Ending | 30 <sup>th</sup> %ile (in) | 70 <sup>th</sup> %ile (in) | Observed (in) | Wetness Condition | Condition Value | Month Weight | Product                |
|----------------|----------------------------|----------------------------|---------------|-------------------|-----------------|--------------|------------------------|
| 2020-11-08     | 0.398032                   | 1.548819                   | 0.0           | Dry               | 1               | 3            | 3                      |
| 2020-10-09     | 0.0                        | 0.194882                   | 0.0           | Normal            | 2               | 2            | 4                      |
| 2020-09-09     | 0.0                        | 0.0                        | 0.011811      | Wet               | 3               | 1            | 3                      |
| Result         |                            |                            |               |                   |                 |              | Normal Conditions - 10 |

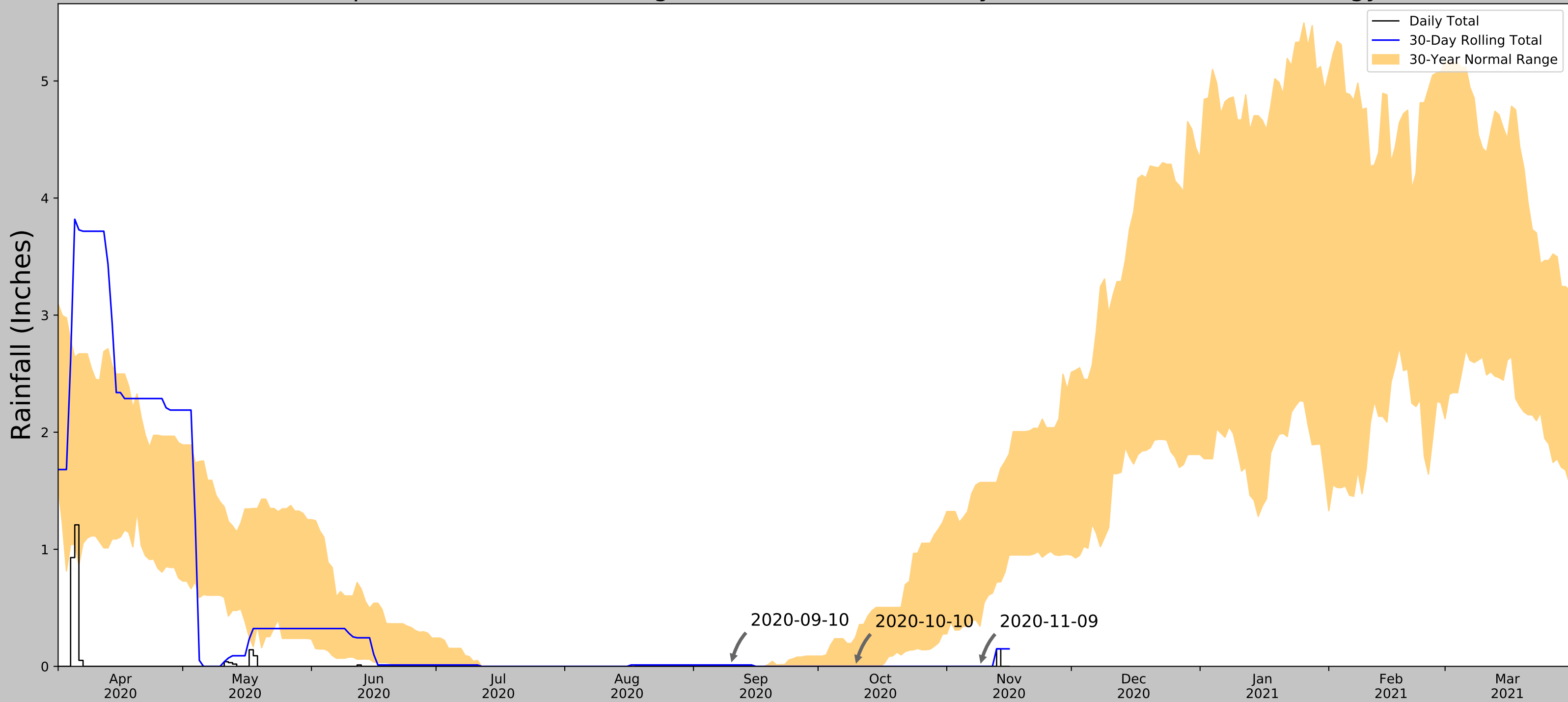
Figure and tables made by the  
**Antecedent Precipitation Tool**  
Version 1.0

Written by Jason Deters  
U.S. Army Corps of Engineers

| Weather Station Name  | Coordinates        | Elevation (ft) | Distance (mi) | Elevation Δ | Weighted Δ | Days (Normal) | Days (Antecedent) |
|-----------------------|--------------------|----------------|---------------|-------------|------------|---------------|-------------------|
| SACRAMENTO 5 ESE      | 38.5556, -121.4169 | 38.058         | 13.908        | 75.512      | 7.309      | 11352         | 85                |
| RANCHO CORDOVA 1.5 SE | 38.5804, -121.2812 | 104.003        | 9.166         | 9.567       | 4.212      | 1             | 0                 |
| CARMICHAEL 0.9 NE     | 38.6429, -121.3059 | 129.921        | 13.53         | 16.351      | 6.31       | 0             | 5                 |



# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



|                                  |                            |
|----------------------------------|----------------------------|
| Coordinates                      | 38.472457, -121.182621     |
| Observation Date                 | 2020-11-09                 |
| Elevation (ft)                   | 113.57                     |
| Drought Index (PDSI)             | Moderate drought (2020-10) |
| WebWIMP H <sub>2</sub> O Balance | Wet Season                 |

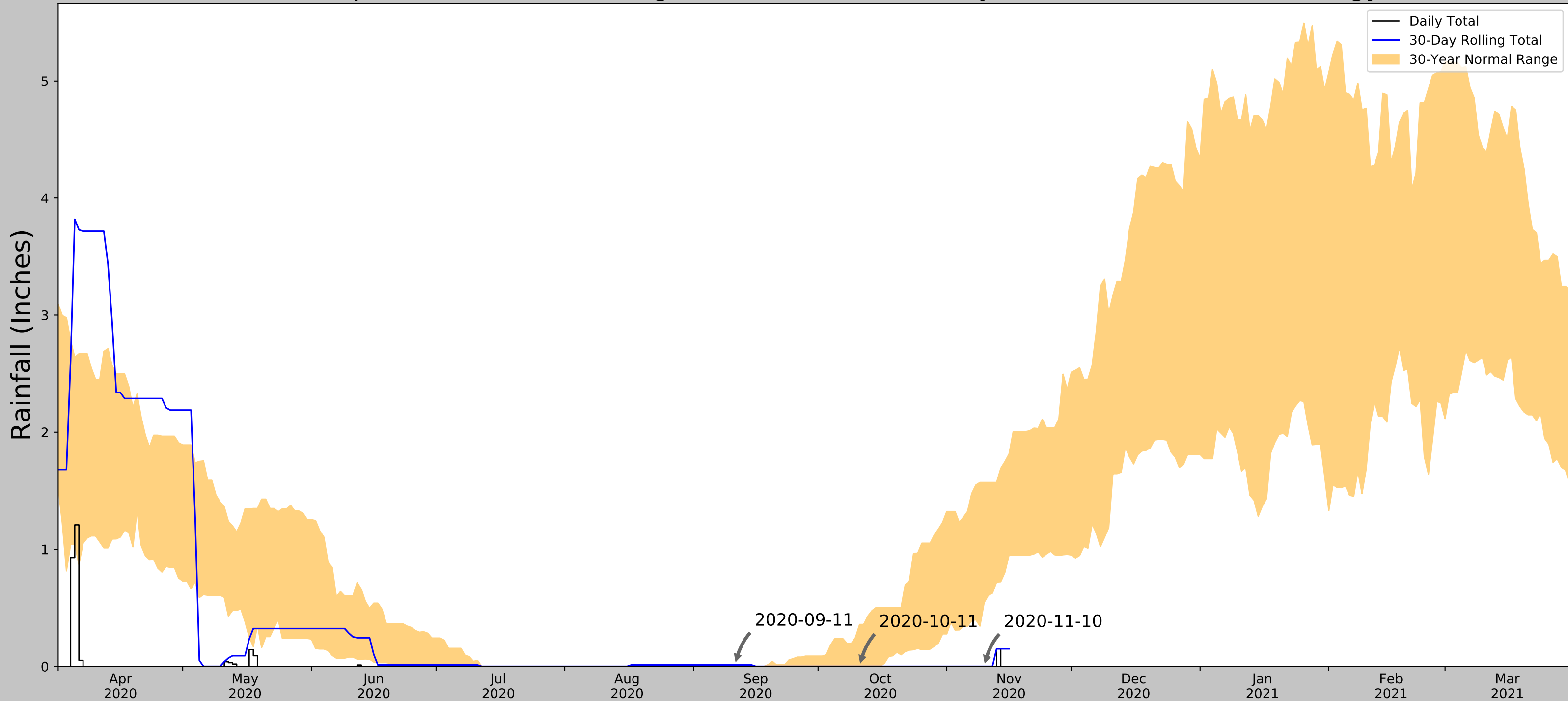
| 30 Days Ending | 30 <sup>th</sup> %ile (in) | 70 <sup>th</sup> %ile (in) | Observed (in) | Wetness Condition | Condition Value | Month Weight | Product                |
|----------------|----------------------------|----------------------------|---------------|-------------------|-----------------|--------------|------------------------|
| 2020-11-09     | 0.343307                   | 1.570866                   | 0.0           | Dry               | 1               | 3            | 3                      |
| 2020-10-10     | 0.0                        | 0.245276                   | 0.0           | Normal            | 2               | 2            | 4                      |
| 2020-09-10     | 0.0                        | 0.0                        | 0.011811      | Wet               | 3               | 1            | 3                      |
| Result         |                            |                            |               |                   |                 |              | Normal Conditions - 10 |

Figure and tables made by the  
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U.S. Army Corps of Engineers

| Weather Station Name  | Coordinates        | Elevation (ft) | Distance (mi) | Elevation Δ | Weighted Δ | Days (Normal) | Days (Antecedent) |
|-----------------------|--------------------|----------------|---------------|-------------|------------|---------------|-------------------|
| SACRAMENTO 5 ESE      | 38.5556, -121.4169 | 38.058         | 13.908        | 75.512      | 7.309      | 11352         | 85                |
| RANCHO CORDOVA 1.5 SE | 38.5804, -121.2812 | 104.003        | 9.166         | 9.567       | 4.212      | 1             | 0                 |
| CARMICHAEL 0.9 NE     | 38.6429, -121.3059 | 129.921        | 13.53         | 16.351      | 6.31       | 0             | 5                 |

# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



|                                  |                            |
|----------------------------------|----------------------------|
| Coordinates                      | 38.472457, -121.182621     |
| Observation Date                 | 2020-11-10                 |
| Elevation (ft)                   | 113.57                     |
| Drought Index (PDSI)             | Moderate drought (2020-10) |
| WebWIMP H <sub>2</sub> O Balance | Wet Season                 |

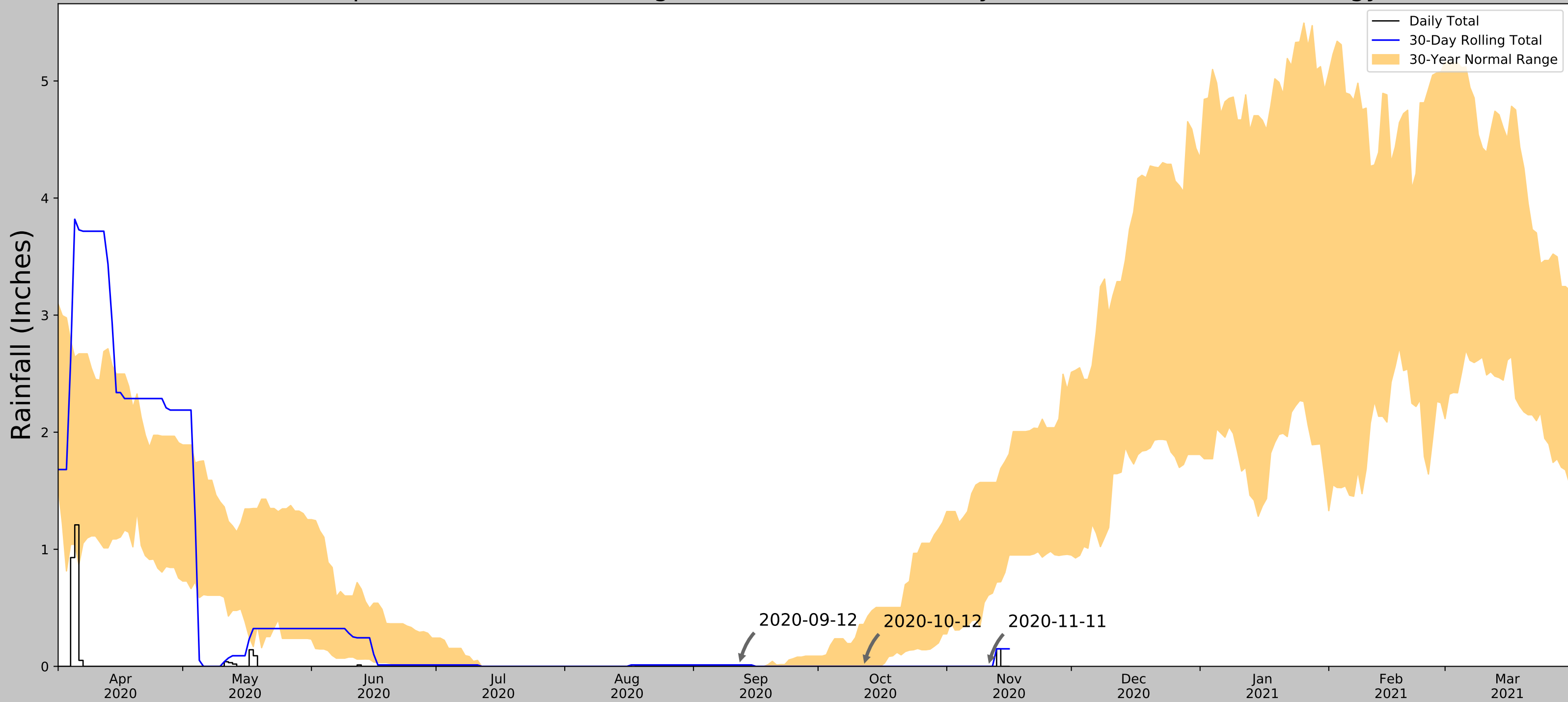
| 30 Days Ending | 30 <sup>th</sup> %ile (in) | 70 <sup>th</sup> %ile (in) | Observed (in) | Wetness Condition | Condition Value | Month Weight | Product                |
|----------------|----------------------------|----------------------------|---------------|-------------------|-----------------|--------------|------------------------|
| 2020-11-10     | 0.544488                   | 1.570866                   | 0.0           | Dry               | 1               | 3            | 3                      |
| 2020-10-11     | 0.0                        | 0.357874                   | 0.0           | Normal            | 2               | 2            | 4                      |
| 2020-09-11     | 0.0                        | 0.0                        | 0.011811      | Wet               | 3               | 1            | 3                      |
| Result         |                            |                            |               |                   |                 |              | Normal Conditions - 10 |

Figure and tables made by the  
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Version 1.0

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| Weather Station Name  | Coordinates        | Elevation (ft) | Distance (mi) | Elevation Δ | Weighted Δ | Days (Normal) | Days (Antecedent) |
|-----------------------|--------------------|----------------|---------------|-------------|------------|---------------|-------------------|
| SACRAMENTO 5 ESE      | 38.5556, -121.4169 | 38.058         | 13.908        | 75.512      | 7.309      | 11352         | 85                |
| RANCHO CORDOVA 1.5 SE | 38.5804, -121.2812 | 104.003        | 9.166         | 9.567       | 4.212      | 1             | 0                 |
| CARMICHAEL 0.9 NE     | 38.6429, -121.3059 | 129.921        | 13.53         | 16.351      | 6.31       | 0             | 5                 |

# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



|                                  |                            |
|----------------------------------|----------------------------|
| Coordinates                      | 38.472457, -121.182621     |
| Observation Date                 | 2020-11-11                 |
| Elevation (ft)                   | 113.57                     |
| Drought Index (PDSI)             | Moderate drought (2020-10) |
| WebWIMP H <sub>2</sub> O Balance | Wet Season                 |

| 30 Days Ending | 30 <sup>th</sup> %ile (in) | 70 <sup>th</sup> %ile (in) | Observed (in) | Wetness Condition | Condition Value | Month Weight | Product                |
|----------------|----------------------------|----------------------------|---------------|-------------------|-----------------|--------------|------------------------|
| 2020-11-11     | 0.607087                   | 1.570866                   | 0.0           | Dry               | 1               | 3            | 3                      |
| 2020-10-12     | 0.0                        | 0.357874                   | 0.0           | Normal            | 2               | 2            | 4                      |
| 2020-09-12     | 0.0                        | 0.0                        | 0.011811      | Wet               | 3               | 1            | 3                      |
| Result         |                            |                            |               |                   |                 |              | Normal Conditions - 10 |

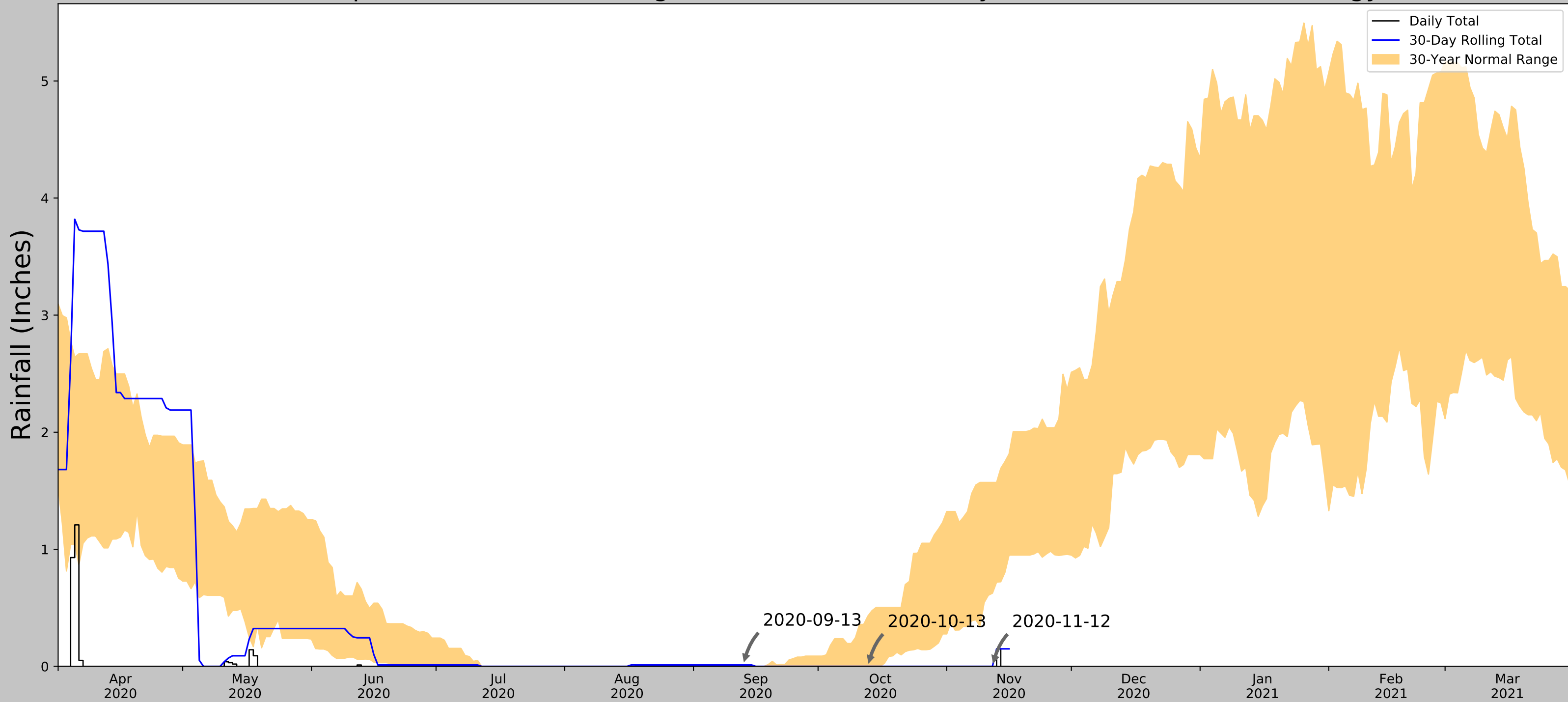
Figure and tables made by the  
**Antecedent Precipitation Tool**  
Version 1.0

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| Weather Station Name  | Coordinates        | Elevation (ft) | Distance (mi) | Elevation Δ | Weighted Δ | Days (Normal) | Days (Antecedent) |
|-----------------------|--------------------|----------------|---------------|-------------|------------|---------------|-------------------|
| SACRAMENTO 5 ESE      | 38.5556, -121.4169 | 38.058         | 13.908        | 75.512      | 7.309      | 11352         | 85                |
| RANCHO CORDOVA 1.5 SE | 38.5804, -121.2812 | 104.003        | 9.166         | 9.567       | 4.212      | 1             | 0                 |
| CARMICHAEL 0.9 NE     | 38.6429, -121.3059 | 129.921        | 13.53         | 16.351      | 6.31       | 0             | 5                 |



# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



|                                  |                            |
|----------------------------------|----------------------------|
| Coordinates                      | 38.472457, -121.182621     |
| Observation Date                 | 2020-11-12                 |
| Elevation (ft)                   | 113.57                     |
| Drought Index (PDSI)             | Moderate drought (2020-10) |
| WebWIMP H <sub>2</sub> O Balance | Wet Season                 |

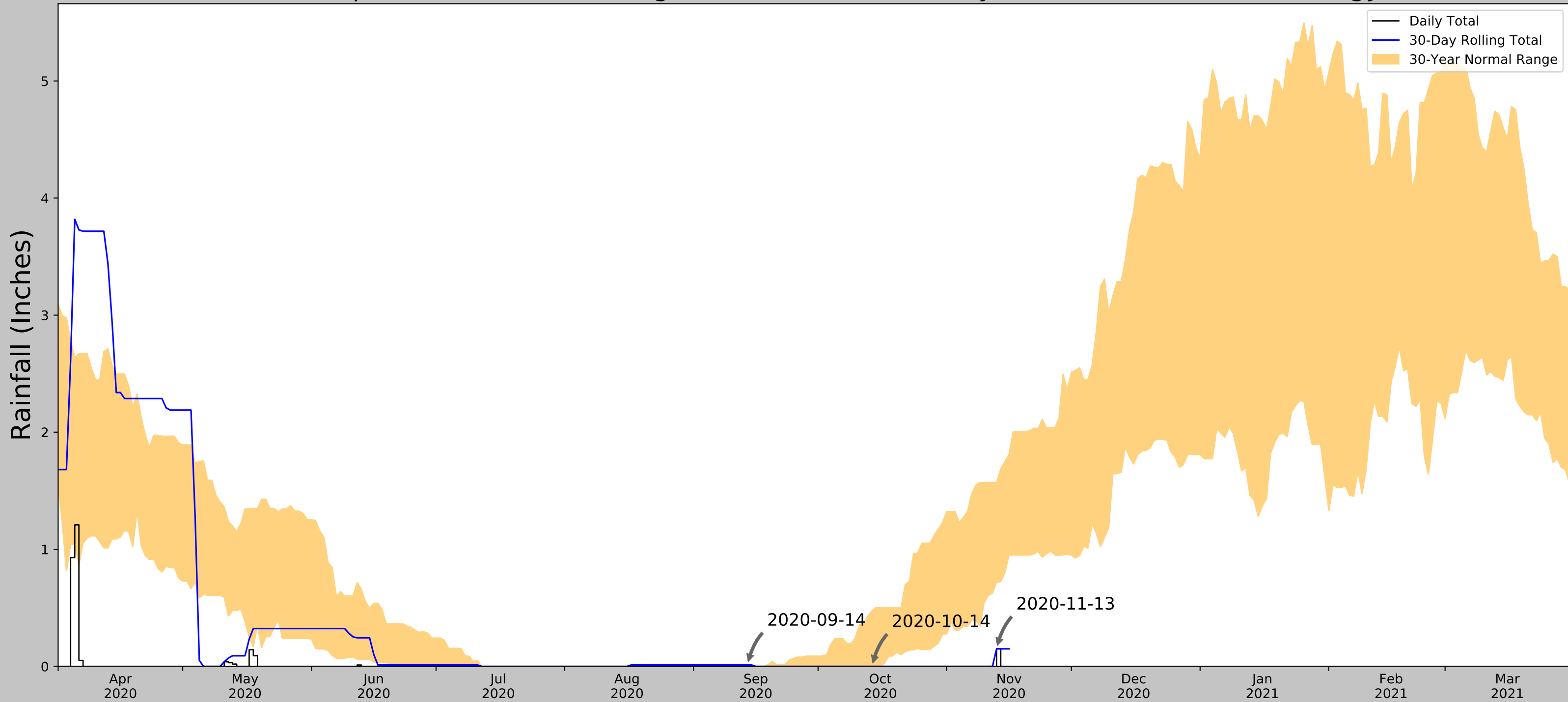
| 30 Days Ending | 30 <sup>th</sup> %ile (in) | 70 <sup>th</sup> %ile (in) | Observed (in) | Wetness Condition | Condition Value | Month Weight | Product                |
|----------------|----------------------------|----------------------------|---------------|-------------------|-----------------|--------------|------------------------|
| 2020-11-12     | 0.625197                   | 1.570866                   | 0.0           | Dry               | 1               | 3            | 3                      |
| 2020-10-13     | 0.0                        | 0.429528                   | 0.0           | Normal            | 2               | 2            | 4                      |
| 2020-09-13     | 0.0                        | 0.0                        | 0.011811      | Wet               | 3               | 1            | 3                      |
| Result         |                            |                            |               |                   |                 |              | Normal Conditions - 10 |

Figure and tables made by the  
**Antecedent Precipitation Tool**  
Version 1.0

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U.S. Army Corps of Engineers

| Weather Station Name  | Coordinates        | Elevation (ft) | Distance (mi) | Elevation Δ | Weighted Δ | Days (Normal) | Days (Antecedent) |
|-----------------------|--------------------|----------------|---------------|-------------|------------|---------------|-------------------|
| SACRAMENTO 5 ESE      | 38.5556, -121.4169 | 38.058         | 13.908        | 75.512      | 7.309      | 11352         | 85                |
| RANCHO CORDOVA 1.5 SE | 38.5804, -121.2812 | 104.003        | 9.166         | 9.567       | 4.212      | 1             | 0                 |
| CARMICHAEL 0.9 NE     | 38.6429, -121.3059 | 129.921        | 13.53         | 16.351      | 6.31       | 0             | 5                 |

# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



|                                  |                            |
|----------------------------------|----------------------------|
| Coordinates                      | 38.472457, -121.182621     |
| Observation Date                 | 2020-11-13                 |
| Elevation (ft)                   | 113.57                     |
| Drought Index (PDSI)             | Moderate drought (2020-10) |
| WebWIMP H <sub>2</sub> O Balance | Wet Season                 |

| 30 Days Ending | 30 <sup>th</sup> %ile (in) | 70 <sup>th</sup> %ile (in) | Observed (in) | Wetness Condition | Condition Value | Month Weight | Product                |
|----------------|----------------------------|----------------------------|---------------|-------------------|-----------------|--------------|------------------------|
| 2020-11-13     | 0.719685                   | 1.570866                   | 0.149606      | Dry               | 1               | 3            | 3                      |
| 2020-10-14     | 0.0                        | 0.475984                   | 0.0           | Normal            | 2               | 2            | 4                      |
| 2020-09-14     | 0.0                        | 0.0                        | 0.011811      | Wet               | 3               | 1            | 3                      |
| Result         |                            |                            |               |                   |                 |              | Normal Conditions - 10 |

Figure and tables made by the  
**Antecedent Precipitation Tool**  
Version 1.0

Written by Jason Deters  
U.S. Army Corps of Engineers

| Weather Station Name  | Coordinates        | Elevation (ft) | Distance (mi) | Elevation Δ | Weighted Δ | Days (Normal) | Days (Antecedent) |
|-----------------------|--------------------|----------------|---------------|-------------|------------|---------------|-------------------|
| SACRAMENTO 5 ESE      | 38.5556, -121.4169 | 38.058         | 13.908        | 75.512      | 7.309      | 11352         | 85                |
| RANCHO CORDOVA 1.5 SE | 38.5804, -121.2812 | 104.003        | 9.166         | 9.567       | 4.212      | 1             | 0                 |
| CARMICHAEL 0.9 NE     | 38.6429, -121.3059 | 129.921        | 13.53         | 16.351      | 6.31       | 0             | 5                 |

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# **Appendix E**

## Antecedent Precipitation Tool Output



APPENDIX E- AQUATIC RESOURCES SPREADSHEET  
 Aquatic Resouces Delineation for the Sloughhouse Solar Project

| Waters_Name                          | State      | Cowardin_Code | HGM_Code | Meas_Type | Amount | Units | Waters_Type | Latitude    | Longitude     | Local_Waterway |
|--------------------------------------|------------|---------------|----------|-----------|--------|-------|-------------|-------------|---------------|----------------|
| D-01                                 | CALIFORNIA | R5            |          | Area      | 0.2384 | ACRE  | ISOLATE     | 38.47373100 | -121.18456800 |                |
| D-02                                 | CALIFORNIA | R5            |          | Area      | 1.537  | ACRE  | RPW         | 38.47373100 | -121.18456800 |                |
| D-03                                 | CALIFORNIA | R5            |          | Area      | 0.701  | ACRE  | UPLAND      | 38.46685600 | -121.17581200 |                |
| D-04                                 | CALIFORNIA | R5            |          | Area      | 0.152  | ACRE  | UPLAND      | 38.46699800 | -121.17552000 |                |
| ED-01 through ED-05                  | CALIFORNIA | R6            |          | Area      | 1.111  | ACRE  | UPLAND      | 38.47373100 | -121.18456800 |                |
| FEW-01                               | CALIFORNIA | PEM           | DEPRESS  | Area      | 0.018  | ACRE  | ISOLATE     | 38.47373100 | -121.18456800 |                |
| ID-01                                | CALIFORNIA | R4            |          | Area      | 2.364  | ACRE  | RPW         | 38.47373100 | -121.18456800 |                |
| P-01 and P-02                        | CALIFORNIA | PEM           | DEPRESS  | Area      | 0.6475 | ACRE  | ISOLATE     | 38.47373100 | -121.18456800 |                |
| P-03                                 | CALIFORNIA | PEM           | DEPRESS  | Area      | 16.36  | ACRE  | TNWW        | 38.47373100 | -121.18456800 |                |
| PD-01                                | CALIFORNIA | R3            |          | Area      | 24.09  | ACRE  | TNW         | 38.47373100 | -121.18456800 | Cosumnes River |
| SW-01 through -28, -32-36, and -38-5 | CALIFORNIA | PEM           | DEPRESS  | Area      | 11.34  | ACRE  | ISOLATE     | 38.47373100 | -121.18456800 |                |
| SW-29, -30, -31, and -37             | CALIFORNIA | PEM           | DEPRESS  | Area      | 2.816  | ACRE  | RPWWD       | 38.47373100 | -121.18456800 |                |
| SWS-01 through SWS-15                | CALIFORNIA | R6            |          | Area      | 2.148  | ACRE  | UPLAND      | 38.47373100 | -121.18456800 |                |
| US-01 through US-08                  | CALIFORNIA | U             |          | Area      | 0.6281 | ACRE  | UPLAND      | 38.47373100 | -121.18456800 |                |
| VP-01 through VP-16                  | CALIFORNIA | PEM           | DEPRESS  | Area      | 6.249  | ACRE  | ISOLATE     | 38.47373100 | -121.18456800 |                |
| VP-17                                | CALIFORNIA | PEM           | DEPRESS  | Area      | 0.0482 | ACRE  | RPWWD       | 38.47373100 | -121.18456800 |                |

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# Appendix F

## Datasheets

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/27/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 1  
 Investigator(s): A, Sennett, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatlands Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47541863 Long: -121.1745827 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br><br>Associated feature: <u>SW-01.</u><br><u>Grazed</u>                                                                                                                                                                       |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                                                                                                                                                                                                                                                                                                                                                | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                                                                                                                                                                                                                                                                                                                                       | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                     |
| 2. _____                                                                                                                                                                                                                                                                                                                                                                                       | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                                                                                                                                                                                                                                                                                                                                                                       | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                                                                                                                                                                                                                                                                                                                                                       | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                                                                                                                                                                                                                                                                                                                                                                            |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____ |
| _____ = Total Cover                                                                                                                                                                                                                                                                                                                                                                            |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>                                                                                                                                                                                                                                                                                                                                                |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                                                                                                                                                                                                                                                                                                                                                                       | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                                                                                                                                                                                                                                                                                                                                                                       | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                                                                                                                                                                                                                                                                                                                                                                       | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                                                                                                                                                                                                                                                                                                                                                       | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                                                                                                                                                                                                                                                                                                                                                                       | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                                                                                                                                                                                                                                                                                                                                                                            |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b>                                                                                                                                                                                                                                                                                                                                                |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. <u>Hordeum marinum</u>                                                                                                                                                                                                                                                                                                                                                                      | <u>25</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                     |
| 2. <u>Polypogon monspeliensis</u>                                                                                                                                                                                                                                                                                                                                                              | <u>10</u>        | <u>N</u>                         | <u>FACW</u>      |                                                                                                                                                                                                                                                                                                                                     |
| 3. <u>Festuca perennis</u>                                                                                                                                                                                                                                                                                                                                                                     | <u>25</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                     |
| 4. <u>Rumex dentatus</u>                                                                                                                                                                                                                                                                                                                                                                       | <u>10</u>        | <u>N</u>                         | <u>FACW</u>      |                                                                                                                                                                                                                                                                                                                                     |
| 5. <u>Holocarpha virgate</u>                                                                                                                                                                                                                                                                                                                                                                   | <u>10</u>        | <u>N</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                     |
| 6. _____                                                                                                                                                                                                                                                                                                                                                                                       | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 7. _____                                                                                                                                                                                                                                                                                                                                                                                       | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 8. _____                                                                                                                                                                                                                                                                                                                                                                                       | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                                                                                                                                                                                                                                                                                                                                                                            |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| <b>Woody Vine Stratum (Plot size: _____)</b>                                                                                                                                                                                                                                                                                                                                                   |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                                                                                                                                                                                                                                                                                                                                                                       | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                                                                                                                                                                                                                                                                                                                                                                       | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                                                                                                                                                                                                                                                                                                                                                                            |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| % Bare Ground in Herb Stratum <u>20</u>                                                                                                                                                                                                                                                                                                                                                        |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                     |
| <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.                                                                                                                                                                                                                                                                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____                                                                                                                                                                                                                                                                                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |

Remarks:  
 Change in vegetation cover and sp. composition. Lolium perenne indicator status used



**SOIL**

Sampling Point: 1

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-3                                                                                                                        | 7.5 YR 4/1    | 93 | 5 yr 4/6       | 7 | C                 | PL               | Silty clay |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/27/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 2  
 Investigator(s): A, Sennett, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatland Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47540505 Long: -121.1745692 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated Feature: SW01                                                                                                                                                                                                     |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| <p><u>Tree Stratum</u> (Plot size: _____)</p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:40%;"></th> <th style="width:10%;">Absolute % Cover</th> <th style="width:10%;">Dominant Species?</th> <th style="width:10%;">Indicator Status</th> </tr> </thead> <tbody> <tr><td>1. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>3. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td colspan="4" style="text-align: right;">_____ = Total Cover</td></tr> </tbody> </table> <p><u>Sapling/Shrub Stratum</u> (Plot size: _____)</p> <table style="width:100%; border-collapse: collapse;"> <tbody> <tr><td>1. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>3. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>5. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td colspan="4" style="text-align: right;">_____ = Total Cover</td></tr> </tbody> </table> <p><u>Herb Stratum</u> (Plot size: <u>5m x 5m</u>)</p> <table style="width:100%; border-collapse: collapse;"> <tbody> <tr><td>1. <u>Holocarpha virgate</u></td><td align="center"><u>25</u></td><td align="center"><u>Y</u></td><td align="center"><u>NL</u></td></tr> <tr><td>2. <u>Bromus hordeaceus</u></td><td align="center"><u>75</u></td><td align="center"><u>Y</u></td><td align="center"><u>FACU</u></td></tr> <tr><td>3. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>5. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>6. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>7. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>8. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td colspan="4" style="text-align: right;">_____ = Total Cover</td></tr> </tbody> </table> <p><u>Woody Vine Stratum</u> (Plot size: _____)</p> <table style="width:100%; border-collapse: collapse;"> <tbody> <tr><td>1. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td colspan="4" style="text-align: right;">_____ = Total Cover</td></tr> </tbody> </table> <p>% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u></p> |                                                                                                                                                                                                                                                                                                                                     | Absolute % Cover  | Dominant Species? | Indicator Status | 1. _____ | _____ | _____ | _____ | 2. _____ | _____ | _____ | _____ | 3. _____ | _____ | _____ | _____ | 4. _____ | _____ | _____ | _____ | _____ = Total Cover |  |  |  | 1. _____ | _____ | _____ | _____ | 2. _____ | _____ | _____ | _____ | 3. _____ | _____ | _____ | _____ | 4. _____ | _____ | _____ | _____ | 5. _____ | _____ | _____ | _____ | _____ = Total Cover |  |  |  | 1. <u>Holocarpha virgate</u> | <u>25</u> | <u>Y</u> | <u>NL</u> | 2. <u>Bromus hordeaceus</u> | <u>75</u> | <u>Y</u> | <u>FACU</u> | 3. _____ | _____ | _____ | _____ | 4. _____ | _____ | _____ | _____ | 5. _____ | _____ | _____ | _____ | 6. _____ | _____ | _____ | _____ | 7. _____ | _____ | _____ | _____ | 8. _____ | _____ | _____ | _____ | _____ = Total Cover |  |  |  | 1. _____ | _____ | _____ | _____ | 2. _____ | _____ | _____ | _____ | _____ = Total Cover |  |  |  | <p><b>Dominance Test worksheet:</b></p> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B) |
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| 2. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | _____                                                                                                                                                                                                                                                                                                                               | _____             | _____             |                  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |                              |           |          |           |                             |           |          |             |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |                     |  |  |  |                                                                                                                                                                                                                                                           |
| 3. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | _____                                                                                                                                                                                                                                                                                                                               | _____             | _____             |                  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |                              |           |          |           |                             |           |          |             |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |                     |  |  |  |                                                                                                                                                                                                                                                           |
| 4. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | _____                                                                                                                                                                                                                                                                                                                               | _____             | _____             |                  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |                              |           |          |           |                             |           |          |             |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |                     |  |  |  |                                                                                                                                                                                                                                                           |
| _____ = Total Cover                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                     |                   |                   |                  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |                              |           |          |           |                             |           |          |             |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |                     |  |  |  |                                                                                                                                                                                                                                                           |
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| 2. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | _____                                                                                                                                                                                                                                                                                                                               | _____             | _____             |                  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |                              |           |          |           |                             |           |          |             |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |                     |  |  |  |                                                                                                                                                                                                                                                           |
| 3. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | _____                                                                                                                                                                                                                                                                                                                               | _____             | _____             |                  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |                              |           |          |           |                             |           |          |             |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |                     |  |  |  |                                                                                                                                                                                                                                                           |
| 4. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | _____                                                                                                                                                                                                                                                                                                                               | _____             | _____             |                  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |                              |           |          |           |                             |           |          |             |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |                     |  |  |  |                                                                                                                                                                                                                                                           |
| 5. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | _____                                                                                                                                                                                                                                                                                                                               | _____             | _____             |                  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |                              |           |          |           |                             |           |          |             |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |                     |  |  |  |                                                                                                                                                                                                                                                           |
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| 1. <u>Holocarpha virgate</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <u>25</u>                                                                                                                                                                                                                                                                                                                           | <u>Y</u>          | <u>NL</u>         |                  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |                              |           |          |           |                             |           |          |             |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |                     |  |  |  |                                                                                                                                                                                                                                                           |
| 2. <u>Bromus hordeaceus</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <u>75</u>                                                                                                                                                                                                                                                                                                                           | <u>Y</u>          | <u>FACU</u>       |                  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |                              |           |          |           |                             |           |          |             |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |                     |  |  |  |                                                                                                                                                                                                                                                           |
| 3. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | _____                                                                                                                                                                                                                                                                                                                               | _____             | _____             |                  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |                              |           |          |           |                             |           |          |             |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |                     |  |  |  |                                                                                                                                                                                                                                                           |
| 4. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | _____                                                                                                                                                                                                                                                                                                                               | _____             | _____             |                  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |                              |           |          |           |                             |           |          |             |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |                     |  |  |  |                                                                                                                                                                                                                                                           |
| 5. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | _____                                                                                                                                                                                                                                                                                                                               | _____             | _____             |                  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |                              |           |          |           |                             |           |          |             |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |                     |  |  |  |                                                                                                                                                                                                                                                           |
| 6. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | _____                                                                                                                                                                                                                                                                                                                               | _____             | _____             |                  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |                              |           |          |           |                             |           |          |             |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |                     |  |  |  |                                                                                                                                                                                                                                                           |
| 7. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | _____                                                                                                                                                                                                                                                                                                                               | _____             | _____             |                  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |                              |           |          |           |                             |           |          |             |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |                     |  |  |  |                                                                                                                                                                                                                                                           |
| 8. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | _____                                                                                                                                                                                                                                                                                                                               | _____             | _____             |                  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |                              |           |          |           |                             |           |          |             |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |                     |  |  |  |                                                                                                                                                                                                                                                           |
| _____ = Total Cover                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                     |                   |                   |                  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |                              |           |          |           |                             |           |          |             |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |                     |  |  |  |                                                                                                                                                                                                                                                           |
| 1. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | _____                                                                                                                                                                                                                                                                                                                               | _____             | _____             |                  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |                              |           |          |           |                             |           |          |             |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |                     |  |  |  |                                                                                                                                                                                                                                                           |
| 2. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | _____                                                                                                                                                                                                                                                                                                                               | _____             | _____             |                  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |                              |           |          |           |                             |           |          |             |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |                     |  |  |  |                                                                                                                                                                                                                                                           |
| _____ = Total Cover                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                     |                   |                   |                  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |                              |           |          |           |                             |           |          |             |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |                     |  |  |  |                                                                                                                                                                                                                                                           |
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| Remarks:<br>Grazed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <p><sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <p><b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/></p>                                                                                                                 |                   |                   |                  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |                              |           |          |           |                             |           |          |             |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |          |       |       |       |                     |  |  |  |          |       |       |       |          |       |       |       |                     |  |  |  |                                                                                                                                                                                                                                                           |

**SOIL**

Sampling Point: 2

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |     |                |   |                   |                  |         |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |     | Redox Features |   |                   |                  | Texture | Remarks |
|                                                                                                                            | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |         |
| 1"                                                                                                                         | 7.5 YR 3/1    | 100 |                |   |                   |                  |         |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/27/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 3  
 Investigator(s): A, Sennett, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatland Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47523757 Long: -121.1747089 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Associated feature: SW-03. Grazed                                                                                                                                                                                            |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------|------------------|----------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.7</u> (A/B)                                                                                                                                       |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                        | _____            | _____                            | _____            | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. <u>Hordeum marinum</u>                       | 30               | Y                                | FAC              | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 2. <u>Rumex dentatus</u>                        | 10               | N                                | FACW             |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. <u>Festuca perennis</u>                      | 15               | Y                                | FACW             |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. <u>Holocarpha virgate</u>                    | 15               | Y                                | UPL              |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. <u>Bromus hordeaceus</u>                     | 5                | N                                | FACU             |                                                                                                                                                                                                                                                                                                                                                                                                |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 75 = Total Cover                                |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                        | _____            | _____                            | _____            | <b>Hydrophytic Vegetation Present?</b><br>Yes <input checked="" type="checkbox"/> No _____                                                                                                                                                                                                                                                                                                     |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| % Bare Ground in Herb Stratum <u>25</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| Remarks:                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |

**SOIL**

Sampling Point: 3

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-3                                                                                                                        | 7.5 YR 4/1    | 93 | 5 YR 4/6       | 7 | C                 | PL               | Silty Clay |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/27/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 4  
 Investigator(s): A, Sennett, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatlands Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47524044 Long: -121.174652 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: na

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
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| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated Feature: <u>SW 03</u>                                                                                                                                                                                             |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                                         | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------------------------------------------------------|------------------|----------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                                | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                                                                 |
| 2. _____                                                                                | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                                                                | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                                                                | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                                                                     |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>_____ Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                                 |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>                                         |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                                                                | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. _____                                                                                | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                                                                | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                                                                | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. _____                                                                                | _____            | _____                            | _____            | <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| _____ = Total Cover                                                                     |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b>                                         |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. <u>Bromus hordeaceus</u>                                                             | <u>75</u>        | <u>Y</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. <u>Holocarpha virgate</u>                                                            | <u>25</u>        | <u>Y</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                                                                | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                                                                | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. _____                                                                                | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 6. _____                                                                                | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 7. _____                                                                                | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 8. _____                                                                                | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                                                                     |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Woody Vine Stratum (Plot size: _____)</b>                                            |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                                                                | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. _____                                                                                | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                                                                     |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| % Bare Ground in Herb Stratum <u>0</u>                                                  |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |

Remarks:  
Grazed area



**SOIL**

Sampling Point: 4

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-2                                                                                                                        | 7.5 YR 3/2    | 97 | 5 yr 4/6       | 3 | C                 | PL               | Silty clay |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/27/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 5  
 Investigator(s): A, Sennett and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatlands Local relief (concave, convex, none): None Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47489308 Long: -121.1749057 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
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| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Associated feature: SWS 01. Grazed.                                                                                                                                                                                          |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------|------------------|----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                         |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. <u>Hordeum marinum</u>                       | <u>50</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 2. <u>Festuca perennis</u>                      | <u>5</u>         | <u>N</u>                         | <u>FACW</u>      |                                                                                                                                                                                                                                                                                                                                 |
| 3. <u>Holocarpha virgate</u>                    | <u>10</u>        | <u>N</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 4. <u>Bromus hordeaceus</u>                     | <u>10</u>        | <u>N</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                 |
| 5. <u>Rumex dentatus</u>                        | <u>5</u>         | <u>N</u>                         | <u>FACW</u>      |                                                                                                                                                                                                                                                                                                                                 |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| % Bare Ground in Herb Stratum <u>20</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                 |
| Remarks:                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/27/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 6  
 Investigator(s): A, Sennett, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatland Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47494863 Long: -121.1745465 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

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| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: SW 05                                                                                                                                                                                                    |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------|------------------|----------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                             |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                                       |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. _____                                        | _____            | _____                            | _____            | <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. <u>Holocarpha virgate</u>                    | <u>25</u>        | <u>Y</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. <u>Bromus hordeaceus</u>                     | <u>75</u>        | <u>Y</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| % Bare Ground in Herb Stratum <u>0</u>          |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Remarks:                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |



## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/27/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 7  
 Investigator(s): A, Sennett, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): flatland Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47450824 Long: -121.1744418 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Associated feature: SW-06. Partially grazed.                                                                                                                                                                                 |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------|------------------|----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                         |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 0 = Total Cover                                 |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. <u>Festuca perennis</u>                      | 25               | Y                                | FACW             |                                                                                                                                                                                                                                                                                                                                 |
| 2. <u>Holocarpha virgate</u>                    | 10               | N                                | UPL              |                                                                                                                                                                                                                                                                                                                                 |
| 3. <u>Hordeum marinum</u>                       | 25               | Y                                | FAC              |                                                                                                                                                                                                                                                                                                                                 |
| 4. <u>Eryngium castrense</u>                    | 5                | N                                | OBL              |                                                                                                                                                                                                                                                                                                                                 |
| 5. <u>Hypochaeris glabra</u>                    | 2.5              | N                                | NL               |                                                                                                                                                                                                                                                                                                                                 |
| 6. <u>Bromus hordeaceus</u>                     | 5                | N                                | FACU             |                                                                                                                                                                                                                                                                                                                                 |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 72.5 = Total Cover                              |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| % Bare Ground in Herb Stratum <u>87.5</u>       |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                 |

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

Remarks:  
 Change in vegetation cover/ composition



**SOIL**

Sampling Point: 7

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |    |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|----|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |    |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-4                                                                                                                        | 7.5 YR 3/2    | 90 | 5 yr 4/6       | 10 | C                 | PL               | Silty clay |         |
|                                                                                                                            |               |    |                |    |                   |                  |            |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/27/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 8  
 Investigator(s): A, Sennett, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatlands Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47444778 Long: -121.1753235 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Associated feature: SW07. Grazed.                                                                                                                                                                                            |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------|------------------|----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                         |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. <u>Hordeum marinum</u>                       | <u>75</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| % Bare Ground in Herb Stratum <u>25</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                 |

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

Remarks:  
 Change in vegetation cover/ composition





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/27/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 9  
 Investigator(s): A, Sennett, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatland Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): C Lat: 38.4742124 Long: -121.174705 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Remarks:<br>Within SW-08. Grazed                                                                                                                                                                                                                                                                  |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                     | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------------------------------|------------------|----------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                            | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33.3</u> (A/B)                                                                                                                               |
| 2. _____                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                     |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>2.5</u> x 1 = <u>2.5</u><br>FACW species <u>2.5</u> x 2 = <u>5</u><br>FAC species <u>40</u> x 3 = <u>120</u><br>FACU species <u>15</u> x 4 = <u>60</u><br>UPL species <u>15</u> x 5 = <u>75</u><br>Column Totals: <u>75</u> (A) <u>262.5</u> (B)<br><br>Prevalence Index = B/A = <u>3.5</u> |
| 0 = Total Cover                                     |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>     |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 2. _____                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. _____                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                     |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b>     |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. <u>Hordeum marinum</u>                           | <u>30</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 2. <u>Holocarpha virgate</u>                        | <u>15</u>        | <u>Y</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. <u>Festuca perennis</u>                          | <u>10</u>        | <u>N</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. <u>Bromus hordeaceus</u>                         | <u>15</u>        | <u>Y</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. <u>Alopecurus saccatus</u>                       | <u>2.5</u>       | <u>N</u>                         | <u>OBL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 6. <u>Rumex dentatus</u>                            | <u>2.5</u>       | <u>N</u>                         | <u>FACW</u>      |                                                                                                                                                                                                                                                                                                                                                                                                |
| 7. _____                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 8. _____                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 75 = Total Cover                                    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Woody Vine Stratum (Plot size: _____)</b>        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 2. _____                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                     |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| % Bare Ground in Herb Stratum <u>25</u>             |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| Remarks:<br>Change in vegetation cover/ composition |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |

Hydrophytic Vegetation Present? Yes  No

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/27/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 10  
 Investigator(s): A. Sennet and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): flatlands Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47436035 Long: -121.1748463 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Associated feature: SW-10. Lightly grazed.                                                                                                                                                                                   |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------|------------------|----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                         |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 0 = Total Cover                                 |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. <u>Hordeum marinum</u>                       | <u>37.5</u>      | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 2. <u>Rumex dentatus</u>                        | <u>2.5</u>       | <u>N</u>                         | <u>FACW</u>      |                                                                                                                                                                                                                                                                                                                                 |
| 3. <u>Holocarpha virgata</u>                    | <u>10</u>        | <u>N</u>                         | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                 |
| 4. <u>Bromus hordeaceus</u>                     | <u>10</u>        | <u>N</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                 |
| 5. <u>Elymus caput-medusae</u>                  | <u>10</u>        | <u>N</u>                         | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                 |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 70 = Total Cover                                |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| % Bare Ground in Herb Stratum <u>30</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                 |

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

Remarks:  
 Change in veg cover and composition



**SOIL**

Sampling Point: 10

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |    |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|----|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |    |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-3                                                                                                                        | 7.5 YR 3/2    | 90 | 5 YR 4/6       | 10 | C                 | PL               | Silty clay |         |
|                                                                                                                            |               |    |                |    |                   |                  |            |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/27/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 11  
 Investigator(s): A. Sennet and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): flatlands Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47404942 Long: -121.1745257 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br><br>Associated Feature: SW11                                                                                                                                                                                                 |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                     |
| 2. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b><br>1. _____<br>2. _____<br>3. _____<br>4. _____<br>5. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                     |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b><br>1. <u>Hordeum marinum</u> <span style="float:right">60</span> <span style="float:right">Y</span> <span style="float:right">FAC</span><br>2. <u>Festuca perennis</u> <span style="float:right">10</span> <span style="float:right">N</span> <span style="float:right">FAC</span><br>3. <u>Holocarpha virgata</u> <span style="float:right">5</span> <span style="float:right">N</span> <span style="float:right">NL</span><br>4. <u>Rumex dentatus</u> <span style="float:right">5</span> <span style="float:right">N</span> <span style="float:right">FACW</span><br>5. _____<br>6. _____<br>7. _____<br>8. _____ |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                     |
| 80 = Total Cover                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                     |
| <b>Woody Vine Stratum (Plot size: _____)</b><br>1. _____<br>2. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                     |
| % Bare Ground in Herb Stratum <u>20</u> % Cover of Biotic Crust <u>0</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                     |
| Remarks:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                     |

**SOIL**

Sampling Point: 11

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |    |                   |                  |            |         |
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| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |    |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-2                                                                                                                        | 7.5 Y/R 3/2   | 85 | 5 YR 5/8       | 15 | C                 | M/PL             | Silty clay |         |
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## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/27/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 12  
 Investigator(s): A. Sennet and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): flatlands Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): Galt clay, 2 - 5% slopes Lat: 38.47404197 Long: -121.1745408 Datum: WGS84  
 Soil Map Unit Name: TBD NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: SW11a                                                                                                                                                                                                                                                             |                                                                                                                     |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------|------------------|----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                           |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| <u>0</u> = Total Cover                          |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| <u>0</u> = Total Cover                          |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. <u>Bromus hordeaceus</u>                     | <u>70</u>        | <u>Y</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                 |
| 2. <u>Holocarpha virgata</u>                    | <u>15</u>        | <u>N</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 3. <u>Elymus caput-medusae</u>                  | <u>15</u>        | <u>N</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| <u>100</u> = Total Cover                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| <u>0</u> = Total Cover                          |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| % Bare Ground in Herb Stratum <u>0</u>          |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                 |
| Remarks:                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |

**SOIL**

Sampling Point: 12

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |   |                   |                  |            |         |
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| Depth<br>(inches)                                                                                                   | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                     | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-2                                                                                                                 | 7.5 Y/R 3/2   | 98 | 5 YR 5/8       | 2 | C                 | PL               | Silty clay |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/27/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 13  
 Investigator(s): A, Sennett and A. Godinho Section, Township, Range: TBD  
 Landform (hillslope, terrace, etc.): Flatlands Local relief (concave, convex, none): concave Slope (%): 1  
 Subregion (LRR): C Lat: 38.47410807 Long: -121.1732138 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
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| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Remarks:<br>Located within Margin of VP-01                                                                                                                                                                                                                                                        |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------|------------------|----------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                                                                                        |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                 |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. <u>Hordeum marinum</u>                       | <u>40</u>        | <u>Y</u>                         | <u>FAC</u>       | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 2. <u>Festuca perennis</u>                      | <u>7.5</u>       | <u>N</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. <u>Holocarpha virgate</u>                    | <u>15</u>        | <u>N</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. <u>Erigeron sp</u>                           | <u>15</u>        | <u>N</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. <u>Rumex dentatus</u>                        | <u>2.5</u>       | <u>N</u>                         | <u>FACW</u>      |                                                                                                                                                                                                                                                                                                                                                                                                |
| 6. <u>Alopecurus saccatus</u>                   | <u>2.5</u>       | <u>N</u>                         | <u>OBL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 7. <u>Bromus hordeaceus</u>                     | <u>7.5</u>       | <u>N</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 90 = Total Cover                                |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                        | _____            | _____                            | _____            | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| % Bare Ground in Herb Stratum <u>10</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>                                                                                                                                                                                                                                                                                     |
| Remarks:<br>Lightly grazed                      |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/28/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 14  
 Investigator(s): L. Burris, A. Sennet, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): bottomland Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47401179 Long: -121.1742674 Datum: WGS84  
 Soil Map Unit Name: Galt Clay, 2-5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Associated feature: VP-10. Small depression in grassland, heavily grazed                                                                                                                                                     |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                       | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------------------------------------------------|------------------|-------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                              | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                                                                                        |
| 2. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| _____ = Total Cover                                                   |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>                       |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                                              | _____            | _____             | _____            | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                |
| 2. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b>                       |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. <u>Hordeum marinum</u>                                             | <u>30</u>        | <u>Y</u>          | <u>FAC</u>       | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 2. <u>Festuca perennis</u>                                            | <u>25</u>        | <u>Y</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. <u>Rumex pulcher</u>                                               | <u>5</u>         | <u>N</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 6. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 7. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 8. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| <u>60</u> = Total Cover                                               |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Woody Vine Stratum (Plot size: _____)</b>                          |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                                              | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b><br>Yes <input checked="" type="checkbox"/> No _____                                                                                                                                                                                                                                                                                                     |
| 2. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| _____ = Total Cover                                                   |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| % Bare Ground in Herb Stratum <u>40</u> % Cover of Biotic Crust _____ |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| Remarks:                                                              |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |

**SOIL**

Sampling Point: 14

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |           |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|-----------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture   | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-2                                                                                                                        | 7.5 Y/R 3/3   | 95 | 5 YR 5/8       | 5 | C                 | PL               | clay/silt |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/28/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 15  
 Investigator(s): L. Burris, A. Sennet, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): flatland Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47403752 Long: -121.1742239 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: VP-10. Heavy grazed.                                                                                                                                                                                     |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                       | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------------------------------------------|------------------|-------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                              | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                               |
| 2. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                                                   |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>                       |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                                              | _____            | _____             | _____            | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                     |
| 2. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                                                   |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b>                       |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| 1. <u>Holocarpha virgata</u>                                          | <u>10</u>        | <u>N</u>          | <u>NL</u>        | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 2. <u>Hordeum murinum</u>                                             | <u>20</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. <u>Bromus hordeaceus</u>                                           | <u>20</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. <u>Festuca perennis</u>                                            | <u>10</u>        | <u>N</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                     |
| 5. <u>Cynodon dactylon</u>                                            | <u>20</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                     |
| 6. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 7. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 8. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| <u>90</u> = Total Cover                                               |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Woody Vine Stratum (Plot size: _____)</b>                          |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                                              | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b><br>Yes _____ No <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                          |
| 2. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                                                   |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| % Bare Ground in Herb Stratum <u>10</u> % Cover of Biotic Crust _____ |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| Remarks:                                                              |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |

**SOIL**

Sampling Point: 15

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-2                                                                                                                        | 7.5 Y/R 2.5/2 | 97 | 5 YR 5/8       | 3 | C                 | PL               | silty clay |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/28/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 16  
 Investigator(s): L. Burris, A. Sennet, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): flatlands Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47383624 Long: -121.1739205 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Associated feature: SW-12. Small depression in grassland. Heavy grazing                                                                                                                                                      |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                       | Absolute % Cover | Dominant Species? | Indicator Status |  |
|-----------------------------------------------------------------------|------------------|-------------------|------------------|--|
| 1. _____                                                              | _____            | _____             | _____            |  |
| 2. _____                                                              | _____            | _____             | _____            |  |
| 3. _____                                                              | _____            | _____             | _____            |  |
| 4. _____                                                              | _____            | _____             | _____            |  |
| _____ = Total Cover                                                   |                  |                   |                  |  |
| Sapling/Shrub Stratum (Plot size: _____)                              | Absolute % Cover | Dominant Species? | Indicator Status |  |
| 1. _____                                                              | _____            | _____             | _____            |  |
| 2. _____                                                              | _____            | _____             | _____            |  |
| 3. _____                                                              | _____            | _____             | _____            |  |
| 4. _____                                                              | _____            | _____             | _____            |  |
| 5. _____                                                              | _____            | _____             | _____            |  |
| _____ = Total Cover                                                   |                  |                   |                  |  |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                             | Absolute % Cover | Dominant Species? | Indicator Status |  |
| 1. <u>Festuca perennis</u>                                            | <u>30</u>        | <u>Y</u>          | <u>FAC</u>       |  |
| 2. <u>Hordeum marinum</u>                                             | <u>30</u>        | <u>Y</u>          | <u>FAC</u>       |  |
| 3. <u>Rumex pulcher</u>                                               | <u>5</u>         | <u>N</u>          | <u>FAC</u>       |  |
| 4. <u>Rumex crispus</u>                                               | <u>5</u>         | <u>N</u>          | <u>FAC</u>       |  |
| 5. _____                                                              | _____            | _____             | _____            |  |
| 6. _____                                                              | _____            | _____             | _____            |  |
| 7. _____                                                              | _____            | _____             | _____            |  |
| 8. _____                                                              | _____            | _____             | _____            |  |
| <u>70</u> = Total Cover                                               |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: _____)                                 | Absolute % Cover | Dominant Species? | Indicator Status |  |
| 1. _____                                                              | _____            | _____             | _____            |  |
| 2. _____                                                              | _____            | _____             | _____            |  |
| _____ = Total Cover                                                   |                  |                   |                  |  |
| % Bare Ground in Herb Stratum <u>10</u> % Cover of Biotic Crust _____ |                  |                   |                  |  |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species \_\_\_\_\_ x 1 = \_\_\_\_\_  
 FACW species \_\_\_\_\_ x 2 = \_\_\_\_\_  
 FAC species \_\_\_\_\_ x 3 = \_\_\_\_\_  
 FACU species \_\_\_\_\_ x 4 = \_\_\_\_\_  
 UPL species \_\_\_\_\_ x 5 = \_\_\_\_\_  
 Column Totals: \_\_\_\_\_ (A) \_\_\_\_\_ (B)  
 Prevalence Index = B/A = \_\_\_\_\_

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

Remarks:  
 Thatch layer



**SOIL**

Sampling Point: 16

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |   |                   |                  |            |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                   | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                     | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-2                                                                                                                 | 7.5 Y/R 3/3   | 95 | 5 YR 5/8       | 5 | C                 | PL               | silty clay |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/28/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 17  
 Investigator(s): L. Burris, A. Sennet, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): flatland Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.4738083 Long: -121.1739917 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Associated feature: SW 13. Grazed.                                                                                                                                                                                           |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                      | Absolute % Cover | Dominant Species? | Indicator Status |  |
|----------------------------------------------------------------------|------------------|-------------------|------------------|--|
| 1. _____                                                             | _____            | _____             | _____            |  |
| 2. _____                                                             | _____            | _____             | _____            |  |
| 3. _____                                                             | _____            | _____             | _____            |  |
| 4. _____                                                             | _____            | _____             | _____            |  |
| _____ = Total Cover                                                  |                  |                   |                  |  |
| Sapling/Shrub Stratum (Plot size: _____)                             | Absolute % Cover | Dominant Species? | Indicator Status |  |
| 1. _____                                                             | _____            | _____             | _____            |  |
| 2. _____                                                             | _____            | _____             | _____            |  |
| 3. _____                                                             | _____            | _____             | _____            |  |
| 4. _____                                                             | _____            | _____             | _____            |  |
| 5. _____                                                             | _____            | _____             | _____            |  |
| _____ = Total Cover                                                  |                  |                   |                  |  |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                            | Absolute % Cover | Dominant Species? | Indicator Status |  |
| 1. <u>Festuca perennis</u>                                           | <u>70</u>        | <u>Y</u>          | <u>FAC</u>       |  |
| 2. <u>Hordeum marinum</u>                                            | <u>20</u>        | <u>Y</u>          | <u>FAC</u>       |  |
| 3. <u>Convolvulus arvensis</u>                                       | <u>5</u>         | <u>N</u>          | <u>NL</u>        |  |
| 4. _____                                                             | _____            | _____             | _____            |  |
| 5. _____                                                             | _____            | _____             | _____            |  |
| 6. _____                                                             | _____            | _____             | _____            |  |
| 7. _____                                                             | _____            | _____             | _____            |  |
| 8. _____                                                             | _____            | _____             | _____            |  |
| <u>95</u> = Total Cover                                              |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |  |
| 1. _____                                                             | _____            | _____             | _____            |  |
| 2. _____                                                             | _____            | _____             | _____            |  |
| _____ = Total Cover                                                  |                  |                   |                  |  |
| % Bare Ground in Herb Stratum <u>5</u> % Cover of Biotic Crust _____ |                  |                   |                  |  |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species \_\_\_\_\_ x 1 = \_\_\_\_\_  
 FACW species \_\_\_\_\_ x 2 = \_\_\_\_\_  
 FAC species \_\_\_\_\_ x 3 = \_\_\_\_\_  
 FACU species \_\_\_\_\_ x 4 = \_\_\_\_\_  
 UPL species \_\_\_\_\_ x 5 = \_\_\_\_\_  
 Column Totals: \_\_\_\_\_ (A) \_\_\_\_\_ (B)  
 Prevalence Index = B/A = \_\_\_\_\_

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

Remarks:





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/28/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 18  
 Investigator(s): L. Burris, A. Sennet, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): flatland Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): C Lat: 38.47379357 Long: -121.1740404 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: TBD

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>Grazed. Upland point to 17 (SW-13)                                                                                                                                                                                                                                                    |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                      | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------------------------------------|------------------|-------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                             | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                               |
| 2. _____                                                             | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                                             | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                             | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                                             | _____            | _____             | _____            | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                     |
| 2. _____                                                             | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                                             | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                             | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                                             | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b>                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| 1. <u>Bromus hordeaceus</u>                                          | <u>70</u>        | <u>Y</u>          | <u>FACU</u>      | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 2. <u>Festuca perennis</u>                                           | <u>10</u>        | <u>N</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. <u>Hordeum murinum</u>                                            | <u>15</u>        | <u>N</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. <u>Holocarpha virgata</u>                                         | <u>5</u>         | <u>N</u>          | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                                             | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 6. _____                                                             | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 7. _____                                                             | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 8. _____                                                             | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Woody Vine Stratum (Plot size: _____)</b>                         |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                                             | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                       |
| 2. _____                                                             | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust _____ |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| Remarks:                                                             |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |   |                   |                  |            |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth (inches)                                                                                                      | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                     | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-2                                                                                                                 | 7.5 Y/R 2.5/2 | 97 | 5 YR 5/8       | 3 | C                 | PL               | silty clay |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Indicators for Problematic Hydric Soils <sup>3</sup> :                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5) (LRR C)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR D)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Sandy Mucky Mineral (S1)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Loamy Mucky Mineral (F1)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Vernal Pools (F9) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR B)<br><input type="checkbox"/> Reduced Vertic (F18)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Other (Explain in Remarks)                                                                                                                                                                                                 |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|                                                                                         |                                                                                                 |
|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Restrictive Layer (if present):</b><br>Type: <u>clay</u><br>Depth (inches): <u>2</u> | <b>Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|

Remarks:

**HYDROLOGY**

| Wetland Hydrology Indicators:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Indicators (minimum of one required; check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Secondary Indicators (2 or more required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) (Nonriverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)<br><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)<br><input type="checkbox"/> Surface Soil Cracks (B6)<br><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Other (Explain in Remarks) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <input type="checkbox"/> Water Marks (B1) (Riverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Riverine)<br><input type="checkbox"/> Drift Deposits (B3) (Riverine)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> FAC-Neutral Test (D5)                   |

|                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Field Observations:</b><br>Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe)    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ | <b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/28/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 19  
 Investigator(s): A, Sennett and A. Godinho, L. Burris Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatland Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47333069 Long: -121.1724767 Datum: WGS84  
 Soil Map Unit Name: San Joaquin-Galt complex, 0 - 3% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br><br>Associated Feature: <u>VP-02</u><br><u>Grazing, hoof punch</u>                                                                                                                                                           |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------|------------------|----------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                           |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| _____ = Total Cover                             |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>_____ Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                           |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                           |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                           |
| 1. <u>Festuca perennis</u>                      | <u>20</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                           |
| 2. <u>Eryngium castrense</u>                    | <u>5</u>         | <u>N</u>                         | <u>OBL</u>       |                                                                                                                                                                                                                                                                                                                                           |
| 3. <u>Hordeum marinum</u>                       | <u>10</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                           |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                           |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                           |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                           |
| % Bare Ground in Herb Stratum <u>65</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                           |

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

Remarks:



**SOIL**

Sampling Point: 19

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-3                                                                                                                        | 7.5 YR 3/2    | 93 | 5 yr 5/8       | 7 | C                 | PL/M             | Silty clay |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/28/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 20  
 Investigator(s): L. Burris, A. Sennet, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): flatland Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47326571 Long: -121.1727206 Datum: WGS84  
 Soil Map Unit Name: San Joaquin-Galt complex, 0 - 3% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Associated feature: SW 14. Grazed.                                                                                                                                                                                           |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                       | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------------------------------------------------|------------------|-------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                              | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.6</u> (A/B)                                                                                                                                       |
| 2. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| _____ = Total Cover                                                   |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>                       |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                                              | _____            | _____             | _____            | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                |
| 2. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b>                       |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. <u>Festuca perennis</u>                                            | <u>20</u>        | <u>Y</u>          | <u>FAC</u>       | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 2. <u>Holocarpha virgata</u>                                          | <u>5</u>         | <u>N</u>          | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. <u>Hordeum marinum</u>                                             | <u>20</u>        | <u>Y</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. <u>Bromus hordeaceus</u>                                           | <u>20</u>        | <u>Y</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 6. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 7. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 8. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| <u>65</u> = Total Cover                                               |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Woody Vine Stratum (Plot size: _____)</b>                          |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                                              | _____            | _____             | _____            | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.                                                                                                                                                                                                                                                                                 |
| 2. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| _____ = Total Cover                                                   |                  |                   |                  | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____                                                                                                                                                                                                                                                                                                        |
| % Bare Ground in Herb Stratum <u>35</u> % Cover of Biotic Crust _____ |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |

Remarks:





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/28/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 21  
 Investigator(s): A, Sennett, A. Godinho, L. Burris Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatland Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.4730223 Long: -121.1728146 Datum: WGS84  
 Soil Map Unit Name: San Joaquin-Galt complex, 0 - 3% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
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| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br><br>Associated Feature: <u>VP-03</u><br><u>Grazing, hoof punch</u>                                                                                                                                                           |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------|------------------|----------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                                                                                                                                                                                                      |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| _____ = Total Cover                             |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____                                                                                                                                                                                  |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. _____                                        | _____            | _____                            | _____            | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. <u>Holocarpha virgate</u>                    | <u>5</u>         | <u>N</u>                         | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. <u>Eryngium castrense</u>                    | <u>15</u>        | <u>Y</u>                         | <u>OBL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. <u>Festuca perennis</u>                      | <u>20</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. <u>Hordeum marinum</u>                       | <u>10</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| % Bare Ground in Herb Stratum <u>50</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

Remarks:  
Grazing

**SOIL**

Sampling Point: 21

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-3                                                                                                                        | 7.5 YR 3/2    | 93 | 5 yr 5/8       | 7 | C                 | PL/M             | Silty clay |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/28/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 22  
 Investigator(s): A, Sennett, A. Godinho, L. Burris Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatland Local relief (concave, convex, none): Convex Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47303304 Long: -121.1729528 Datum: WGS84  
 Soil Map Unit Name: San Joaquin-Galt complex, 0 - 3% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br><br>Grazing.<br>Associated Feature: VP-04                                                                                                                                                                                    |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                          | Absolute % Cover | Dominant Species? | Indicator Status |  |
|--------------------------------------------------------------------------|------------------|-------------------|------------------|--|
| 1. _____                                                                 | _____            | _____             | _____            |  |
| 2. _____                                                                 | _____            | _____             | _____            |  |
| 3. _____                                                                 | _____            | _____             | _____            |  |
| 4. _____                                                                 | _____            | _____             | _____            |  |
| _____ = Total Cover                                                      |                  |                   |                  |  |
| Sapling/Shrub Stratum (Plot size: _____)                                 |                  |                   |                  |  |
| 1. _____                                                                 | _____            | _____             | _____            |  |
| 2. _____                                                                 | _____            | _____             | _____            |  |
| 3. _____                                                                 | _____            | _____             | _____            |  |
| 4. _____                                                                 | _____            | _____             | _____            |  |
| 5. _____                                                                 | _____            | _____             | _____            |  |
| _____ = Total Cover                                                      |                  |                   |                  |  |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                                |                  |                   |                  |  |
| 1. <u>Bromus hordeaceus</u>                                              | <u>25</u>        | <u>Y</u>          | <u>FACU</u>      |  |
| 2. <u>Holocarpha virgata</u>                                             | <u>5</u>         | <u>N</u>          | <u>NL</u>        |  |
| 3. <u>Hordeum marinum</u>                                                | <u>10</u>        | <u>Y</u>          | <u>FAC</u>       |  |
| 4. _____                                                                 | _____            | _____             | _____            |  |
| 5. _____                                                                 | _____            | _____             | _____            |  |
| 6. _____                                                                 | _____            | _____             | _____            |  |
| 7. _____                                                                 | _____            | _____             | _____            |  |
| 8. _____                                                                 | _____            | _____             | _____            |  |
| _____ = Total Cover                                                      |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: _____)                                    |                  |                   |                  |  |
| 1. _____                                                                 | _____            | _____             | _____            |  |
| 2. _____                                                                 | _____            | _____             | _____            |  |
| _____ = Total Cover                                                      |                  |                   |                  |  |
| % Bare Ground in Herb Stratum <u>60</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |  |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 1 x 3 = 3  
 FACU species 1 x 4 = 4  
 UPL species 1 x 5 = 5  
 Column Totals: 3 (A) 12 (B)  
 Prevalence Index = B/A = 4

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

Remarks:  
 Thatch present



**SOIL**

Sampling Point: 22

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |         |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|---------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |         |
| 0-2                                                                                                                        | 7.5 YR 3/2    | 95 | 5 yr 5/8       | 5 | C                 | PL               | Clay    |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/28/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 23  
 Investigator(s): A, Sennett, A. Godinho, L. Burris Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatland Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47268315 Long: -121.1731092 Datum: WGS84  
 Soil Map Unit Name: San Joaquin-Galt complex, 0 - 3% slopes NWI classification: na

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
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| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br><br>Associated Feature: <u>SW15</u><br><u>Grazing and cow punch</u>                                                                                                                                                          |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------|------------------|----------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                     |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                             |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. <u>Festuca perennis</u>                      | <u>30</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                     |
| 2. <u>Holocarpha virgate</u>                    | <u>5</u>         | <u>N</u>                         | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                     |
| 3. <u>Hordeum marinum</u>                       | <u>10</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| % Bare Ground in Herb Stratum <u>55</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                     |
| Remarks:                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |

**SOIL**

Sampling Point: 23

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |   |                   |                  |            |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth (inches)                                                                                                      | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                     | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-3                                                                                                                 | 7.5 YR 3/2    | 93 | 5 yr 5/8       | 7 | C                 | PL/M             | Silty clay |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
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<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Indicators for Problematic Hydric Soils <sup>3</sup> :                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5) (LRR C)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR D)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Sandy Mucky Mineral (S1)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Loamy Mucky Mineral (F1)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Vernal Pools (F9) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR B)<br><input type="checkbox"/> Reduced Vertic (F18)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Other (Explain in Remarks)                                                                                                                                                                                                 |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|                                                                                                 |                                                                                          |
|-------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| <b>Restrictive Layer (if present):</b><br>Type: <u>Clay Hardpan</u><br>Depth (inches): <u>3</u> | Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|-------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|

Remarks:

**HYDROLOGY**

| Wetland Hydrology Indicators:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Indicators (minimum of one required; check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Secondary Indicators (2 or more required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) (Nonriverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)<br><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)<br><input type="checkbox"/> Surface Soil Cracks (B6)<br><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Other (Explain in Remarks) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <input type="checkbox"/> Water Marks (B1) (Riverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Riverine)<br><input type="checkbox"/> Drift Deposits (B3) (Riverine)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> FAC-Neutral Test (D5)        |

|                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| <b>Field Observations:</b><br>Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____<br>Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/28/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 24  
 Investigator(s): L. Burris, A. Sennet, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): flatland Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47304705 Long: -121.1740924 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
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| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Grazing. Associated feature: SW-16                                                                                                                                                                                           |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                       | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------------------------------------------------|------------------|-------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                              | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                                                                                        |
| 2. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| _____ = Total Cover                                                   |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>                       |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                                              | _____            | _____             | _____            | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                |
| 2. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b>                       |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. <u>Holocarpha virgata</u>                                          | <u>5</u>         | <u>N</u>          | <u>NL</u>        | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 2. <u>Hordeum marinum</u>                                             | <u>25</u>        | <u>Y</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. <u>Briza minor</u>                                                 | <u>5</u>         | <u>N</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. <u>Festuca perennis</u>                                            | <u>10</u>        | <u>Y</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 6. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 7. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 8. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| _____ = Total Cover                                                   |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Woody Vine Stratum (Plot size: _____)</b>                          |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                                              | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b><br>Yes <input checked="" type="checkbox"/> No _____                                                                                                                                                                                                                                                                                                     |
| 2. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| _____ = Total Cover                                                   |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| % Bare Ground in Herb Stratum <u>55</u> % Cover of Biotic Crust _____ |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |

Remarks:



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/28/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 25  
 Investigator(s): L. Burris, A. Sennet, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): flatland Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.4734797 Long: -121.1740923 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Grazed. Associated feature: SW-17                                                                                                                                                                                            |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                       | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------------------------------------|------------------|-------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                              | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                                                                                                                                                                                                              |
| 2. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| _____ = Total Cover                                                   |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>                       |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. _____                                                              | _____            | _____             | _____            | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                                                                                                                                      |
| 2. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b>                       |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. <u>Festuca perennis</u>                                            | <u>50</u>        | <u>Y</u>          | <u>FAC</u>       | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 2. <u>Hordeum marinum</u>                                             | <u>25</u>        | <u>Y</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. <u>Rumex crispus</u>                                               | <u>5</u>         | <u>N</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 6. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 7. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 8. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <u>80</u> = Total Cover                                               |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Woody Vine Stratum (Plot size: _____)</b>                          |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. _____                                                              | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b><br>Yes <input checked="" type="checkbox"/> No _____                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 2. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| _____ = Total Cover                                                   |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| % Bare Ground in Herb Stratum <u>20</u> % Cover of Biotic Crust _____ |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Remarks:                                                              |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/28/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 26  
 Investigator(s): L. Burris, A. Sennet, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): flatland Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47351354 Long: -121.174157 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Grazed. Associate feature: SW-17                                                                                                                                                                                             |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                      | Absolute % Cover | Dominant Species? | Indicator Status |  |
|----------------------------------------------------------------------|------------------|-------------------|------------------|--|
| 1. _____                                                             | _____            | _____             | _____            |  |
| 2. _____                                                             | _____            | _____             | _____            |  |
| 3. _____                                                             | _____            | _____             | _____            |  |
| 4. _____                                                             | _____            | _____             | _____            |  |
| _____ = Total Cover                                                  |                  |                   |                  |  |
| Sapling/Shrub Stratum (Plot size: _____)                             |                  |                   |                  |  |
| 1. _____                                                             | _____            | _____             | _____            |  |
| 2. _____                                                             | _____            | _____             | _____            |  |
| 3. _____                                                             | _____            | _____             | _____            |  |
| 4. _____                                                             | _____            | _____             | _____            |  |
| 5. _____                                                             | _____            | _____             | _____            |  |
| _____ = Total Cover                                                  |                  |                   |                  |  |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                            |                  |                   |                  |  |
| 1. <u>Holocarpha virgata</u>                                         | 5                | N                 | NL               |  |
| 2. <u>Bromus hordeaceus</u>                                          | 55               | Y                 | FACU             |  |
| 3. <u>Bromus diandrus</u>                                            | 40               | Y                 | NL               |  |
| 4. _____                                                             | _____            | _____             | _____            |  |
| 5. _____                                                             | _____            | _____             | _____            |  |
| 6. _____                                                             | _____            | _____             | _____            |  |
| 7. _____                                                             | _____            | _____             | _____            |  |
| 8. _____                                                             | _____            | _____             | _____            |  |
| _____ = Total Cover                                                  |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: _____)                                |                  |                   |                  |  |
| 1. _____                                                             | _____            | _____             | _____            |  |
| 2. _____                                                             | _____            | _____             | _____            |  |
| _____ = Total Cover                                                  |                  |                   |                  |  |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust _____ |                  |                   |                  |  |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species \_\_\_\_\_ x 1 = \_\_\_\_\_  
 FACW species \_\_\_\_\_ x 2 = \_\_\_\_\_  
 FAC species \_\_\_\_\_ x 3 = \_\_\_\_\_  
 FACU species \_\_\_\_\_ x 4 = \_\_\_\_\_  
 UPL species \_\_\_\_\_ x 5 = \_\_\_\_\_  
 Column Totals: \_\_\_\_\_ (A) \_\_\_\_\_ (B)  
 Prevalence Index = B/A = \_\_\_\_\_

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

Remarks:

**SOIL**

Sampling Point: 26

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |   |                   |                  |            |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth (inches)                                                                                                      | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                     | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-2                                                                                                                 | 7.5 YR 2.5/3  | 97 | 5 YR 5/8       | 3 | C                 | PL               | Silty clay |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/28/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 27  
 Investigator(s): L. Burris, A. Sennet, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): flatlands Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47208982 Long: -121.1731105 Datum: WGS84  
 Soil Map Unit Name: San Joaquin-Galt complex, 0 - 3% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Grazed. Associated feature: SW-18                                                                                                                                                                                            |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                       | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------------------------------------------------|------------------|-------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                              | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                                                                                |
| 2. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| _____ = Total Cover                                                   |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>                       |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                                              | _____            | _____             | _____            | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____                                                            |
| 2. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b>                       |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. <u>Holocarpha virgata</u>                                          | <u>5</u>         | <u>N</u>          | <u>NL</u>        | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 2. <u>Festuca perennis</u>                                            | <u>15</u>        | <u>Y</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. <u>Hordeum marinum</u>                                             | <u>10</u>        | <u>Y</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 6. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 7. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 8. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| <u>30</u> = Total Cover                                               |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Woody Vine Stratum (Plot size: _____)</b>                          |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                                              | _____            | _____             | _____            | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.                                                                                                                                                                                                                                                                                 |
| 2. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| _____ = Total Cover                                                   |                  |                   |                  | <b>Hydrophytic Vegetation Present?</b><br>Yes <input checked="" type="checkbox"/> No _____                                                                                                                                                                                                                                                                                                     |
| % Bare Ground in Herb Stratum <u>70</u> % Cover of Biotic Crust _____ |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |

Remarks:



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/28/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 28  
 Investigator(s): L. Burris, A. Sennet, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): flatland Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.472042 Long: -121.1730706 Datum: WGS84  
 Soil Map Unit Name: San Joaquin-Galt complex, 0 - 3% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Grazing. Associated feature: SW 18.                                                                                                                                                                                          |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?             | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------|------------------|-------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                         | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                         | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                        | _____            | _____                         | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                        | _____            | _____                         | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                             |                  |                               |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                                       |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                               |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                        | _____            | _____                         | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. _____                                        | _____            | _____                         | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                        | _____            | _____                         | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                             |                  |                               |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b> |                  |                               |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. <u>Bromus hordeaceus</u>                     | <u>75</u>        | <u>Y</u>                      | <u>FACU</u>      | <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 2. <u>Holocarpha virgata</u>                    | <u>10</u>        | <u>N</u>                      | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. <u>Festuca perennis</u>                      | <u>5</u>         | <u>N</u>                      | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                        | _____            | _____                         | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. _____                                        | _____            | _____                         | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 6. _____                                        | _____            | _____                         | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 7. _____                                        | _____            | _____                         | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 8. _____                                        | _____            | _____                         | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <u>90</u> = Total Cover                         |                  |                               |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                               |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                        | _____            | _____                         | _____            | <b>Hydrophytic Vegetation Present?</b><br>Yes _____ No <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                            |
| 2. _____                                        | _____            | _____                         | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                             |                  |                               |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| % Bare Ground in Herb Stratum _____             |                  | % Cover of Biotic Crust _____ |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Remarks:<br>10% unk. thatch                     |                  |                               |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/28/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 29  
 Investigator(s): L. Burris, A. Sennet, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): flatland Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47230867 Long: -121.1734933 Datum: WGS84  
 Soil Map Unit Name: San Joaquin-Galt complex, 0 - 3% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Grazing. Associated feature: SW-19                                                                                                                                                                                           |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                       | Absolute % Cover | Dominant Species? | Indicator Status |  |
|-----------------------------------------------------------------------|------------------|-------------------|------------------|--|
| 1. _____                                                              | _____            | _____             | _____            |  |
| 2. _____                                                              | _____            | _____             | _____            |  |
| 3. _____                                                              | _____            | _____             | _____            |  |
| 4. _____                                                              | _____            | _____             | _____            |  |
| _____ = Total Cover                                                   |                  |                   |                  |  |
| Sapling/Shrub Stratum (Plot size: _____)                              | Absolute % Cover | Dominant Species? | Indicator Status |  |
| 1. _____                                                              | _____            | _____             | _____            |  |
| 2. _____                                                              | _____            | _____             | _____            |  |
| 3. _____                                                              | _____            | _____             | _____            |  |
| 4. _____                                                              | _____            | _____             | _____            |  |
| 5. _____                                                              | _____            | _____             | _____            |  |
| _____ = Total Cover                                                   |                  |                   |                  |  |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                             | Absolute % Cover | Dominant Species? | Indicator Status |  |
| 1. <u>Festuca perennis</u>                                            | <u>15</u>        | <u>Y</u>          | <u>FAC</u>       |  |
| 2. <u>Holocarpha virgata</u>                                          | <u>5</u>         | <u>N</u>          | <u>NL</u>        |  |
| 3. <u>Hordeum marinum</u>                                             | <u>15</u>        | <u>Y</u>          | <u>FAC</u>       |  |
| 4. <u>Rumex crispus</u>                                               | <u>5</u>         | <u>N</u>          | <u>FAC</u>       |  |
| 5. _____                                                              | _____            | _____             | _____            |  |
| 6. _____                                                              | _____            | _____             | _____            |  |
| 7. _____                                                              | _____            | _____             | _____            |  |
| 8. _____                                                              | _____            | _____             | _____            |  |
| <u>40</u> = Total Cover                                               |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: _____)                                 | Absolute % Cover | Dominant Species? | Indicator Status |  |
| 1. _____                                                              | _____            | _____             | _____            |  |
| 2. _____                                                              | _____            | _____             | _____            |  |
| _____ = Total Cover                                                   |                  |                   |                  |  |
| % Bare Ground in Herb Stratum <u>60</u> % Cover of Biotic Crust _____ |                  |                   |                  |  |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species \_\_\_\_\_ x 1 = \_\_\_\_\_  
 FACW species \_\_\_\_\_ x 2 = \_\_\_\_\_  
 FAC species \_\_\_\_\_ x 3 = \_\_\_\_\_  
 FACU species \_\_\_\_\_ x 4 = \_\_\_\_\_  
 UPL species \_\_\_\_\_ x 5 = \_\_\_\_\_  
 Column Totals: \_\_\_\_\_ (A) \_\_\_\_\_ (B)  
 Prevalence Index = B/A = \_\_\_\_\_

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

Remarks:





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/28/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 30  
 Investigator(s): L. Burris, A. Sennet, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): flatland Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47225737 Long: -121.1734844 Datum: WGS84  
 Soil Map Unit Name: San Joaquin-Galt complex, 0 - 3% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                               |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b> Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: SW-19. Grazed.                                                                                                                                                                                           |                                                                                               |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------|------------------|----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                           |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                        | _____            | _____                            | _____            | <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)                                 |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. <u>Bromus hordeaceus</u>                     | <u>90</u>        | <u>Y</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                 |
| 2. <u>Holocarpha virgata</u>                    | <u>5</u>         | <u>N</u>                         | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                 |
| 3. <u>Brodiaea elegans</u>                      | <u>1</u>         | <u>N</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| <u>96</u> = Total Cover                         |                  |                                  |                  | <b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>                                                                                                                                                                                                                                         |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| % Bare Ground in Herb Stratum <u>4</u>          |                  | % Cover of Biotic Crust <u>0</u> |                  | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.                                                                                                                                                                                                                  |
| Remarks:                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |

**SOIL**

Sampling Point: 30

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-2                                                                                                                        | 7.5 YR 2.5/3  | 97 | 5 YR 5/8       | 3 | C                 | PL               | Silty clay |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/28/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 31  
 Investigator(s): L. Burris, A. Sennett, and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatland Local relief (concave, convex, none): None Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.46937803 Long: -121.1744927 Datum: WGS84  
 Soil Map Unit Name: San Joaquin-Galt complex, 0 - 3% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br><br>Associated Feature: <u>Upland 02a</u><br>Minor depression in grassland. No change in Veg form uplands                                                                                                                    |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------|------------------|----------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                       |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| <u>0</u> = Total Cover                          |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| <u>0</u> = Total Cover                          |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. <u>Bromus hordeaceus</u>                     | <u>65</u>        | <u>Y</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                     |
| 2. <u>Holocarpha virgate</u>                    | <u>25</u>        | <u>Y</u>                         | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                     |
| 3. <u>Brodiaea elegans</u>                      | <u>3</u>         | <u>N</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                     |
| 4. <u>Hordeum marinum</u>                       | <u>5</u>         | <u>N</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                     |
| 5. <u>Avena barbata</u>                         | <u>2</u>         | <u>N</u>                         | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                     |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| <u>100</u> = Total Cover                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| <u>0</u> = Total Cover                          |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| % Bare Ground in Herb Stratum <u>0</u>          |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                     |

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

Remarks:  
Bare ground due to severe cattle grazing and trampling





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/28/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 32  
 Investigator(s): L. Burris, A. Sennet, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 0.5  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47514485 Long: -121.1729819 Datum: WGS84  
 Soil Map Unit Name: Peters clay, 1 - 8% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
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| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Grazing. Associated feature: SW-20                                                                                                                                                                                           |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |  |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|--|
| 1. _____                                                                | _____            | _____             | _____            |  |
| 2. _____                                                                | _____            | _____             | _____            |  |
| 3. _____                                                                | _____            | _____             | _____            |  |
| 4. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |  |
| 1. _____                                                                | _____            | _____             | _____            |  |
| 2. _____                                                                | _____            | _____             | _____            |  |
| 3. _____                                                                | _____            | _____             | _____            |  |
| 4. _____                                                                | _____            | _____             | _____            |  |
| 5. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                               | Absolute % Cover | Dominant Species? | Indicator Status |  |
| 1. <u>Bromus hordeaceus</u>                                             | <u>85</u>        | <u>Y</u>          | <u>FACU</u>      |  |
| 2. <u>Hordeum murinum</u>                                               | <u>10</u>        | <u>N</u>          | <u>FACU</u>      |  |
| 3. <u>Holocarpha virgata</u>                                            | <u>5</u>         | <u>N</u>          | <u>NL</u>        |  |
| 4. _____                                                                | _____            | _____             | _____            |  |
| 5. _____                                                                | _____            | _____             | _____            |  |
| 6. _____                                                                | _____            | _____             | _____            |  |
| 7. _____                                                                | _____            | _____             | _____            |  |
| 8. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status |  |
| 1. _____                                                                | _____            | _____             | _____            |  |
| 2. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |  |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 1 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species \_\_\_\_\_ x 1 = \_\_\_\_\_  
 FACW species \_\_\_\_\_ x 2 = \_\_\_\_\_  
 FAC species \_\_\_\_\_ x 3 = \_\_\_\_\_  
 FACU species \_\_\_\_\_ x 4 = \_\_\_\_\_  
 UPL species \_\_\_\_\_ x 5 = \_\_\_\_\_  
 Column Totals: \_\_\_\_\_ (A) \_\_\_\_\_ (B)  
 Prevalence Index = B/A = \_\_\_\_\_

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

Remarks:





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/27/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 33  
 Investigator(s): A, Sennett, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatland Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47552313 Long: -121.1743244 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
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| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Associated feature: SW-02. Grazed                                                                                                                                                                                            |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------|------------------|----------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                                                                                                                                                                                                              |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. _____                                        | _____            | _____                            | _____            | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                                                                                                                                      |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. <u>Hordeum marinum</u>                       | <u>60</u>        | <u>Y</u>                         | <u>FAC</u>       | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 2. <u>Polypogon monspeliensis</u>               | <u>5</u>         | <u>N</u>                         | <u>FACW</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. <u>Rumex dentatus</u>                        | <u>5</u>         | <u>N</u>                         | <u>FACW</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. <u>Holocarpha virgate</u>                    | <u>15</u>        | <u>N</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. <u>Bromus hordeaceus</u>                     | <u>5</u>         | <u>N</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. _____                                        | _____            | _____                            | _____            | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| % Bare Ground in Herb Stratum <u>10</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

Remarks:  
 Change in vegetation cover/ composition



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/27/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 34  
 Investigator(s): A, Sennett, A. Godinho, L. Burris Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatland Local relief (concave, convex, none): None Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47550364 Long: -121.1742754 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br><br>Associated feature: <u>SW02b</u><br><u>Grazed</u>                                                                                                                                                                        |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                                                                                                                                                                                             | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                                                                                                                                                                                    | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                             |
| 2. _____                                                                                                                                                                                                                                    | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 3. _____                                                                                                                                                                                                                                    | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 4. _____                                                                                                                                                                                                                                    | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                           |
| <u>0</u> = Total Cover                                                                                                                                                                                                                      |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>_____ Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b><br>1. _____<br>2. _____<br>3. _____<br>4. _____<br>5. _____                                                                                                                                 |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                           |
| <u>0</u> = Total Cover                                                                                                                                                                                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                           |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b><br>1. <u>Bromus hordeaceus</u> <u>75</u> <u>Y</u> <u>FACU</u><br>2. <u>Holocarpha</u> <u>25</u> <u>N</u> <u>UPL</u><br>3. _____<br>4. _____<br>5. _____<br>6. _____<br>7. _____<br>8. _____ |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                           |
| <u>100</u> = Total Cover                                                                                                                                                                                                                    |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                           |
| <b>Woody Vine Stratum (Plot size: _____)</b><br>1. _____<br>2. _____                                                                                                                                                                        |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                           |
| <u>0</u> = Total Cover                                                                                                                                                                                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                           |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u>                                                                                                                                                                     |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                           |
| Remarks:                                                                                                                                                                                                                                    |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                           |



**SOIL**

Sampling Point: 34

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |     |                |   |                   |                  |         |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |     | Redox Features |   |                   |                  | Texture | Remarks |
|                                                                                                                            | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |         |
| <b>1</b>                                                                                                                   | 7.6 YR 3/1    | 100 |                |   |                   |                  |         |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/27/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 35  
 Investigator(s): A, Sennett, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatland Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47466663 Long: -121.1749705 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Associated feature: SW04. Grazed                                                                                                                                                                                             |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------|------------------|----------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)                                                                                                                           |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                  |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                  |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                  |
| _____ = Total Cover                             |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>60</u> x 3 = <u>180</u><br>FACU species <u>0</u> x 4 = <u>0</u><br>UPL species <u>15</u> x 5 = <u>75</u><br>Column Totals: <u>75</u> (A) <u>255</u> (B)<br>Prevalence Index = B/A = <u>3.4</u> |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                  |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                  |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                  |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                  |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                  |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                  |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                  |
| 1. <u>Hordeum marinum</u>                       | <u>55</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                  |
| 2. <u>Holocarpha virgate</u>                    | <u>15</u>        | <u>Y</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                  |
| 3. <u>Phalaris paradoxa</u>                     | <u>5</u>         | <u>N</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                  |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                  |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                  |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                  |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                  |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                  |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                  |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                  |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                  |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                  |
| % Bare Ground in Herb Stratum <u>25</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                                                                  |

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

Remarks:  
 Grazed- dry season has led to encroachment by upland plant species





## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/27/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 36  
 Investigator(s): A, Sennett, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatland Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47463529 Long: -121.1749852 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: SW04                                                                                                                                                                                                     |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------|------------------|----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                           |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. <u>Holocarpha virgate</u>                    | <u>25</u>        | <u>Y</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 2. <u>Bromus hordeaceus</u>                     | <u>75</u>        | <u>Y</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| % Bare Ground in Herb Stratum <u>0</u>          |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                 |

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

Remarks:



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/27/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 37  
 Investigator(s): A, Sennett and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatlands Local relief (concave, convex, none): None Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47489231 Long: -121.1748799 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: SWS-01                                                                                                                                                                                                   |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                                                                                                                                                                |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| _____ = Total Cover                                                     |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                                                                                                                                      |
| Sapling/Shrub Stratum (Plot size: _____)                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| _____ = Total Cover                                                     |                  |                   |                  | <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.<br><br><b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/> |
| Herb Stratum (Plot size: <u>1m x 1m</u> )                               |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. <u>Bromus diandrus</u>                                               | <u>75</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. <u>Holocarpha virgate</u>                                            | <u>22.5</u>      | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. <u>Brodiaea elegans</u>                                              | <u>2.5</u>       | <u>N</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| _____ = Total Cover                                                     |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Woody Vine Stratum (Plot size: _____)                                   |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| _____ = Total Cover                                                     |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Remarks:                                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |



**SOIL**

Sampling Point: 37

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-3                                                                                                                        | 7.5 YR 4/1    | 93 | 5 YR 4/6       | 7 | C                 | PL               | Silty Clay |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/27/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 38  
 Investigator(s): A, Sennett, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatland Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47502266 Long: -121.1745821 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Associated feature: SW-05. Grazed                                                                                                                                                                                            |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------|------------------|----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                         |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. <u>Hordeum marinum</u>                       | <u>60</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 2. <u>Holocarpha virgate</u>                    | <u>10</u>        | <u>N</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 3. <u>Rumex dentatus</u>                        | <u>5</u>         | <u>N</u>                         | <u>FACW</u>      |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| % Bare Ground in Herb Stratum <u>25</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                 |

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

Remarks:  
 Change in vegetation cover/ composition

**SOIL**

Sampling Point: 38

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |    |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|----|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |    |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-4                                                                                                                        | 7.5 YR 3/2    | 90 | 5 yr 4/6       | 10 | C                 | PL               | Silty clay |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/27/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 39  
 Investigator(s): A, Sennett, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatland Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47454427 Long: -121.1743758 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: SW06                                                                                                                                                                                                     |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------|------------------|----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                           |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| <u>0</u> = Total Cover                          |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| <u>0</u> = Total Cover                          |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. <u>Holocarpha virgate</u>                    | <u>25</u>        | <u>Y</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 2. <u>Bromus hordeaceus</u>                     | <u>75</u>        | <u>Y</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| <u>100</u> = Total Cover                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| <u>0</u> = Total Cover                          |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| % Bare Ground in Herb Stratum <u>0</u>          |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                 |
| Remarks:                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |

**SOIL**

Sampling Point: 39

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-4                                                                                                                        | 7.5 YR 3/2    | 99 | 5 yr 4/6       | 1 | C                 | PL               | Silty clay |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/27/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 40  
 Investigator(s): A, Sennett, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatland Local relief (concave, convex, none): none Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47442741 Long: -121.1753773 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
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| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: SW-07                                                                                                                                                                                                    |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)           | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------|------------------|----------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                  | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                                                                 |
| 2. _____                                  | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                  | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                  | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <u>0</u> = Total Cover                    |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                                       |
| Sapling/Shrub Stratum (Plot size: _____)  | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                  | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. _____                                  | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                  | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                  | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. _____                                  | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <u>0</u> = Total Cover                    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Herb Stratum (Plot size: <u>1m x 1m</u> ) | Absolute % Cover | Dominant Species?                | Indicator Status | <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Bromus hordeaceus</u>               | <u>75</u>        | <u>Y</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. <u>Holocarpha virgate</u>              | <u>25</u>        | <u>Y</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                  | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                  | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. _____                                  | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 6. _____                                  | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 7. _____                                  | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 8. _____                                  | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <u>100</u> = Total Cover                  |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Woody Vine Stratum (Plot size: _____)     | Absolute % Cover | Dominant Species?                | Indicator Status | <b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                               |
| 1. _____                                  | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. _____                                  | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <u>0</u> = Total Cover                    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| % Bare Ground in Herb Stratum <u>0</u>    |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |

Remarks:  
 thatch





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/27/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 41  
 Investigator(s): A, Sennett, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatland Local relief (concave, convex, none): None Slope (%): 0  
 Subregion (LRR): C Lat: 38.47417176 Long: -121.1746816 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>Upland point to 9 (SW-08)                                                                                                                                                                                                                                                             |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                                                                                                                                                     |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <u>0</u> = Total Cover                                                  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                                                                                                                           |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Herb Stratum (Plot size: <u>1m x 1m</u> )                               | Absolute % Cover | Dominant Species? | Indicator Status | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Bromus hordeaceus</u>                                             | <u>75</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 2. <u>Holocarpha virgate</u>                                            | <u>25</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <u>100</u> = Total Cover                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status | <b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Remarks:<br>Plantago Lanceolata                                         |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

**SOIL**

Sampling Point: 41

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |    |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|----|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |    |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-2                                                                                                                        | 7.5 YR 3/2    | 90 | 5 yr 4/6       | 10 | C                 | PL               | Silty clay |         |
|                                                                                                                            |               |    |                |    |                   |                  |            |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/27/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 42  
 Investigator(s): A, Sennett, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatland Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47455012 Long: -121.1747957 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Associated feature: SW-09. Grazed.                                                                                                                                                                                           |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                              | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------------|------------------|----------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                     | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                                                                                        |
| 2. _____                                                     | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                                     | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                                     | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| _____ = Total Cover                                          |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                |
| _____ = Total Cover                                          |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>              |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                                     | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 2. _____                                                     | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                                     | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                                     | _____            | _____                            | _____            | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| _____ = Total Cover                                          |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b>              |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. <u>Hordeum marinum</u>                                    | <u>67.5</u>      | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 2. <u>Rumex dentatus</u>                                     | <u>5</u>         | <u>N</u>                         | <u>FACW</u>      |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. <u>Convolvulus arvensis</u>                               | <u>2.5</u>       | <u>N</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                                     | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. _____                                                     | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| _____ = Total Cover                                          |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Woody Vine Stratum (Plot size: _____)</b>                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                                     | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 2. _____                                                     | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| _____ = Total Cover                                          |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| % Bare Ground in Herb Stratum <u>25</u>                      |                  | % Cover of Biotic Crust <u>0</u> |                  | <b>Hydrophytic Vegetation Present?</b><br>Yes <input checked="" type="checkbox"/> No _____                                                                                                                                                                                                                                                                                                     |
| Remarks:<br>Change in species composition, grazing intensity |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/27/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 43  
 Investigator(s): A, Sennett, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatland Local relief (concave, convex, none): None Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47458075 Long: -121.1747542 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated Feature: SW-09                                                                                                                                                                                                    |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)           | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------|------------------|-------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                  | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                                                                 |
| 2. _____                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <u>0</u> = Total Cover                    |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                                       |
| Sapling/Shrub Stratum (Plot size: _____)  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. _____                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. _____                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <u>0</u> = Total Cover                    |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Herb Stratum (Plot size: <u>1m x 1m</u> ) | _____            | _____             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Holocarpha virgate</u>              | <u>25</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. <u>Bromus hordeaceus</u>               | <u>50</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. <u>Elymus caput-medusae</u>            | <u>25</u>        | <u>Y</u>          | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. _____                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 6. _____                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 7. _____                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 8. _____                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <u>100</u> = Total Cover                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Woody Vine Stratum (Plot size: _____)     | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b><br>Yes _____ No <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                            |
| 1. _____                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. _____                                  | _____            | _____             | _____            | % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u>                                                                                                                                                                                                                                                                                                                                               |
| <u>0</u> = Total Cover                    |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Remarks:                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |



**SOIL**

Sampling Point: 43

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-2                                                                                                                        | 7.5 YR 3/1    | 98 | 5 yr 4/6       | 2 | C                 | PL               | Silty clay |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
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## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/27/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 44  
 Investigator(s): A. Sennet and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): none Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.4743922 Long: -121.1748111 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated Feature: <u>SW-10</u>                                                                                                                                                                                             |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------|------------------|----------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                                                                                                                                                                |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| _____ = Total Cover                             |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                                                                                                                                      |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. _____                                        | _____            | _____                            | _____            | <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.<br><br><b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/> |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. <u>Bromus hordeaceus</u>                     | <u>80</u>        | <u>Y</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. <u>Holocarpha virgata</u>                    | <u>15</u>        | <u>N</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. <u>Elymus caput-medusae</u>                  | <u>5</u>         | <u>N</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| % Bare Ground in Herb Stratum <u>0</u>          |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Remarks:                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

**SOIL**

Sampling Point: 44

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-2                                                                                                                        | 7.5 Y/R 3/2   | 95 | 5 YR 4/6       | 5 | C                 | PL/M             | Silty clay |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/27/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 45  
 Investigator(s): A, Sennett and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatlands Local relief (concave, convex, none): None Slope (%): 1  
 Subregion (LRR): C Lat: 38.47413736 Long: -121.1729284 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Remarks:<br>Located centrally within VP-01. Delineated by extent of Eryngium castrense                                                                                                                                                                                                            |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------|------------------|----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                         |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 0 = Total Cover                                 |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. <u>Hordeum marinum</u>                       | <u>60</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 2. <u>Alopecurus saccatus</u>                   | <u>5</u>         | <u>N</u>                         | <u>OBL</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 3. <u>Erigeron sp.</u>                          | <u>5</u>         | <u>N</u>                         | <u>FACW</u>      |                                                                                                                                                                                                                                                                                                                                 |
| 4. <u>Rumex dentatus</u>                        | <u>5</u>         | <u>N</u>                         | <u>FACW</u>      |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 75 = Total Cover                                |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| % Bare Ground in Herb Stratum <u>25</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                 |

Remarks:  
 Heavily grazed



## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/27/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 46  
 Investigator(s): A, Sennett and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatlands Local relief (concave, convex, none): None Slope (%): 1  
 Subregion (LRR): C Lat: 38.4740867 Long: -121.1735748 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br><u>Upland point to 13 and 45 (VP-01)</u>                                                                                                                                                                                     |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                                                                                                                                                                                                                                                    |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <u>0</u> = Total Cover                                                  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                                                                                                                                                                                                                          |
| Sapling/Shrub Stratum (Plot size: _____)                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 5. _____                                                                | _____            | _____             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.<br><br><b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/> |
| _____ = Total Cover                                                     |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                               |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 1. <u>Bromus hordeaceus</u>                                             | <u>50</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 2. <u>Holocarpha virgate</u>                                            | <u>25</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 3. <u>Elymus caput-medusae</u>                                          | <u>25</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <u>100</u> = Total Cover                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Woody Vine Stratum (Plot size: _____)                                   |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Remarks:                                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |





## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/28/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 47  
 Investigator(s): L. Burris, A. Sennet, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): flatlands Local relief (concave, convex, none): flat Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47389228 Long: -121.1738846 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: SW 12                                                                                                                                                                                                    |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |  |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|--|
| 1. _____                                                                | _____            | _____             | _____            |  |
| 2. _____                                                                | _____            | _____             | _____            |  |
| 3. _____                                                                | _____            | _____             | _____            |  |
| 4. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| Sapling/Shrub Stratum (Plot size: _____)                                |                  |                   |                  |  |
| 1. _____                                                                | _____            | _____             | _____            |  |
| 2. _____                                                                | _____            | _____             | _____            |  |
| 3. _____                                                                | _____            | _____             | _____            |  |
| 4. _____                                                                | _____            | _____             | _____            |  |
| 5. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                               |                  |                   |                  |  |
| 1. <u>Bromus hordeaceus</u>                                             | 50               | Y                 | FACU             |  |
| 2. <u>Holocarpha virgata</u>                                            | 10               | N                 | NL               |  |
| 3. <u>Festuca perennis</u>                                              | 25               | Y                 | FAC              |  |
| 4. <u>Hordeum murinum</u>                                               | 15               | N                 | FACU             |  |
| 5. _____                                                                | _____            | _____             | _____            |  |
| 6. _____                                                                | _____            | _____             | _____            |  |
| 7. _____                                                                | _____            | _____             | _____            |  |
| 8. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: _____)                                   |                  |                   |                  |  |
| 1. _____                                                                | _____            | _____             | _____            |  |
| 2. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |  |
| Remarks:                                                                |                  |                   |                  |  |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

**Prevalence Index worksheet:**  

|                               |                  |
|-------------------------------|------------------|
| Total % Cover of:             | Multiply by:     |
| OBL species <u>0</u>          | x 1 = <u>0</u>   |
| FACW species <u>0</u>         | x 2 = <u>0</u>   |
| FAC species <u>25</u>         | x 3 = <u>75</u>  |
| FACU species <u>65</u>        | x 4 = <u>260</u> |
| UPL species <u>10</u>         | x 5 = <u>50</u>  |
| Column Totals: <u>100</u> (A) | <u>385</u> (B)   |

Prevalence Index = B/A = 38.5

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/28/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 48  
 Investigator(s): A, Sennett, A. Godinho, L. Burris Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatlands Local relief (concave, convex, none): None Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47331199 Long: -121.1725433 Datum: WGS84  
 Soil Map Unit Name: San Joaquin-Galt complex, 0 - 3% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br><br>Associated Feature: VP:02<br>Grazing.                                                                                                                                                                                    |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                                                                                                                                                                                                                                                                                               | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                                                                                                                                                                                                                                                                                      | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                             |
| 2. _____                                                                                                                                                                                                                                                                                                                                      | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 3. _____                                                                                                                                                                                                                                                                                                                                      | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 4. _____                                                                                                                                                                                                                                                                                                                                      | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                           |
| _____ = Total Cover                                                                                                                                                                                                                                                                                                                           |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>_____ Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b><br>1. _____<br>2. _____<br>3. _____<br>4. _____<br>5. _____                                                                                                                                                                                                                                   |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                           |
| _____ = Total Cover                                                                                                                                                                                                                                                                                                                           |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                           |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b><br>1. <u>Bromus hordeaceus</u> <u>60</u> <u>Y</u> <u>FACU</u><br>2. <u>Holocarpha virgate</u> <u>5</u> <u>N</u> <u>NL</u><br>3. <u>Avena barbata</u> <u>10</u> <u>N</u> <u>NL</u><br>4. <u>Hordeum marinum</u> <u>25</u> <u>Y</u> <u>FACU</u><br>5. _____<br>6. _____<br>7. _____<br>8. _____ |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                           |
| _____ = Total Cover                                                                                                                                                                                                                                                                                                                           |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                           |
| <b>Woody Vine Stratum (Plot size: _____)</b><br>1. _____<br>2. _____                                                                                                                                                                                                                                                                          |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                           |
| _____ = Total Cover                                                                                                                                                                                                                                                                                                                           |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                           |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u>                                                                                                                                                                                                                                                                       |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                           |
| Remarks:                                                                                                                                                                                                                                                                                                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                           |

**SOIL**

Sampling Point: 48

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-2                                                                                                                        | 7.5 YR 2.5/2  | 97 | 5 yR 5/8       | 3 | C                 | pl               | Silty clay |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/28/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 49  
 Investigator(s): L. Burris, A. Sennet, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): flatland Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): C Lat: 38.47320174 Long: -121.1727291 Datum: WGS84  
 Soil Map Unit Name: San Joaquin-Galt complex, 0 - 3% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>Upland pt to 20 (SW-14). Grazing                                                                                                                                                                                                                                                      |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                      | Absolute % Cover | Dominant Species? | Indicator Status |  |
|----------------------------------------------------------------------|------------------|-------------------|------------------|--|
| 1. _____                                                             | _____            | _____             | _____            |  |
| 2. _____                                                             | _____            | _____             | _____            |  |
| 3. _____                                                             | _____            | _____             | _____            |  |
| 4. _____                                                             | _____            | _____             | _____            |  |
| _____ = Total Cover                                                  |                  |                   |                  |  |
| Sapling/Shrub Stratum (Plot size: _____)                             | Absolute % Cover | Dominant Species? | Indicator Status |  |
| 1. _____                                                             | _____            | _____             | _____            |  |
| 2. _____                                                             | _____            | _____             | _____            |  |
| 3. _____                                                             | _____            | _____             | _____            |  |
| 4. _____                                                             | _____            | _____             | _____            |  |
| 5. _____                                                             | _____            | _____             | _____            |  |
| _____ = Total Cover                                                  |                  |                   |                  |  |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                            | Absolute % Cover | Dominant Species? | Indicator Status |  |
| 1. <u>Holocarpha virgata</u>                                         | <u>20</u>        | <u>Y</u>          | <u>NL</u>        |  |
| 2. <u>Bromus hordeaceus</u>                                          | <u>70</u>        | <u>Y</u>          | <u>FACU</u>      |  |
| 3. <u>Triteleia laxa</u>                                             | <u>2</u>         | <u>N</u>          | <u>NL</u>        |  |
| 4. <u>Avena barbata</u>                                              | <u>3</u>         | <u>N</u>          | <u>NL</u>        |  |
| 5. _____                                                             | _____            | _____             | _____            |  |
| 6. _____                                                             | _____            | _____             | _____            |  |
| 7. _____                                                             | _____            | _____             | _____            |  |
| 8. _____                                                             | _____            | _____             | _____            |  |
| _____ = Total Cover                                                  |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |  |
| 1. _____                                                             | _____            | _____             | _____            |  |
| 2. _____                                                             | _____            | _____             | _____            |  |
| _____ = Total Cover                                                  |                  |                   |                  |  |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust _____ |                  |                   |                  |  |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species \_\_\_\_\_ x 1 = \_\_\_\_\_  
 FACW species \_\_\_\_\_ x 2 = \_\_\_\_\_  
 FAC species \_\_\_\_\_ x 3 = \_\_\_\_\_  
 FACU species \_\_\_\_\_ x 4 = \_\_\_\_\_  
 UPL species \_\_\_\_\_ x 5 = \_\_\_\_\_  
 Column Totals: \_\_\_\_\_ (A) \_\_\_\_\_ (B)  
 Prevalence Index = B/A = \_\_\_\_\_

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

Remarks:





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/28/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 50  
 Investigator(s): A, Sennett, A. Godinho, L. Burris Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatland Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47298756 Long: -121.1728497 Datum: WGS84  
 Soil Map Unit Name: San Joaquin-Galt complex, 0 - 3% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
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| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: VP-3b<br>Grazed                                                                                                                                                                                          |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------------------------------------------------------|------------------|-------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                                                         |
| 2. _____                                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                                                                     |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species <u>55</u> x 4 = <u>220</u><br>UPL species <u>45</u> x 5 = <u>225</u><br>Column Totals: <u>100</u> (A) <u>445</u> (B)<br><br>Prevalence Index = B/A = <u>4.45</u>                                                 |
| Sapling/Shrub Stratum (Plot size: _____)                                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. _____                                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. _____                                                                                | _____            | _____             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| _____ = Total Cover                                                                     |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                                               | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. <u>Holocarpha virgate</u>                                                            | <u>5</u>         | <u>N</u>          | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. <u>Bromus hordeaceus</u>                                                             | <u>55</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. <u>Avena barbata</u>                                                                 | <u>40</u>        | <u>Y</u>          | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. _____                                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 6. _____                                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 7. _____                                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 8. _____                                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                                                                     |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Woody Vine Stratum (Plot size: _____)                                                   | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. _____                                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                                                                     |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u>                 |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Remarks:                                                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |

**SOIL**

Sampling Point: 50

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |   |                   |                  |            |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth (inches)                                                                                                      | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                     | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-3                                                                                                                 | 7.5 YR 3/2    | 93 | 5 yr 5/8       | 7 | C                 | PL/M             | Silty clay |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Indicators for Problematic Hydric Soils <sup>3</sup> :                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5) (LRR C)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR D)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Sandy Mucky Mineral (S1)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Loamy Mucky Mineral (F1)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input checked="" type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Vernal Pools (F9) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR B)<br><input type="checkbox"/> Reduced Vertic (F18)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Other (Explain in Remarks)                                                                                                                                                                                                            |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|                                                                                         |                                                                                                 |
|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Restrictive Layer (if present):</b><br>Type: <u>Clay</u><br>Depth (inches): <u>2</u> | <b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|

Remarks:

**HYDROLOGY**

| Wetland Hydrology Indicators:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Indicators (minimum of one required; check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Secondary Indicators (2 or more required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) (Nonriverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)<br><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)<br><input type="checkbox"/> Surface Soil Cracks (B6)<br><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Water Marks (B1) (Riverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Riverine)<br><input type="checkbox"/> Drift Deposits (B3) (Riverine)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> FAC-Neutral Test (D5) |
| <b>Field Observations:</b><br>Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe)    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____                                                                                               | <b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/28/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 51  
 Investigator(s): A, Sennett, A. Godinho, L. Burris Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatland Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47302554 Long: -121.1730142 Datum: WGS84  
 Soil Map Unit Name: San Joaquin-Galt complex, 0 - 3% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br><br>Associated Feature: <u>VP-04</u><br><u>Grazing, hoof punch</u>                                                                                                                                                           |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------|------------------|----------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                     |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                             |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. <u>Hordeum marinum</u>                       | <u>10</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                     |
| 2. <u>Holocarpha virgate</u>                    | <u>5</u>         | <u>N</u>                         | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                     |
| 3. <u>Rumex crispus</u>                         | <u>5</u>         | <u>N</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                     |
| 4. <u>Festuca perennis</u>                      | <u>15</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| % Bare Ground in Herb Stratum <u>55</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                     |

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

Remarks:

**SOIL**

Sampling Point: 51

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |   |                   |                  |            |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth (inches)                                                                                                      | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                     | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-3                                                                                                                 | 7.5 YR 3/2    | 93 | 5 yr 5/8       | 7 | C                 | PL/M             | Silty clay |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Indicators for Problematic Hydric Soils <sup>3</sup> :                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5) (LRR C)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR D)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Sandy Mucky Mineral (S1)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Loamy Mucky Mineral (F1)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input checked="" type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Vernal Pools (F9) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR B)<br><input type="checkbox"/> Reduced Vertic (F18)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Other (Explain in Remarks)                                                                                                                                                                                                            |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|                                                                                                 |                                                                                                 |
|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Restrictive Layer (if present):</b><br>Type: <u>Clay Hardpan</u><br>Depth (inches): <u>3</u> | <b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|

Remarks:

**HYDROLOGY**

| Wetland Hydrology Indicators:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Indicators (minimum of one required; check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Secondary Indicators (2 or more required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) (Nonriverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)<br><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)<br><input type="checkbox"/> Surface Soil Cracks (B6)<br><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Other (Explain in Remarks) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <input type="checkbox"/> Water Marks (B1) (Riverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Riverine)<br><input type="checkbox"/> Drift Deposits (B3) (Riverine)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> FAC-Neutral Test (D5)        |

|                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Field Observations:</b><br>Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe)    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ | <b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/28/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 52  
 Investigator(s): A, Sennett, A. Godinho, L. Burris Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatland Local relief (concave, convex, none): None Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47261185 Long: -121.1730809 Datum: WGS84  
 Soil Map Unit Name: San Joaquin-Galt complex, 0 - 3% slope NWI classification: na

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br><br>Associated Feature: <u>SW15</u><br><u>Grazed</u>                                                                                                                                                                         |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------------------------------------------------------|------------------|-------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A/B)                                                                                                                                                         |
| 2. _____                                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                                                                     |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____                                                                                   |
| Sapling/Shrub Stratum (Plot size: _____)                                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. _____                                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. _____                                                                                | _____            | _____             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| _____ = Total Cover                                                                     |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                                               | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. <u>Bromus hordeaceus</u>                                                             | <u>75</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. <u>Holocarpha virgate</u>                                                            | <u>10</u>        | <u>N</u>          | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. <u>Festuca perennis</u>                                                              | <u>10</u>        | <u>N</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. _____                                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 6. _____                                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 7. _____                                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 8. _____                                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                                                                     |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Woody Vine Stratum (Plot size: _____)                                                   | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. _____                                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                                                                     |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| % Bare Ground in Herb Stratum <u>5</u> % Cover of Biotic Crust <u>0</u>                 |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Remarks:                                                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |





## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/28/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 53  
 Investigator(s): L. Burris, A. Sennet, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): flatland Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47292316 Long: -121.1740733 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: SW 16. Grazing.                                                                                                                                                                                          |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                                       | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------------------------------------|------------------|-------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                              | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                                                                 |
| 2. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                                                   |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>                       |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                                              | _____            | _____             | _____            | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                                       |
| 2. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b>                       |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. <u>Bromus hordeaceus</u>                                           | <u>55</u>        | <u>Y</u>          | <u>FACU</u>      | <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 2. <u>Holocarpha virgata</u>                                          | <u>15</u>        | <u>N</u>          | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. <u>Festuca perennis</u>                                            | <u>5</u>         | <u>N</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. <u>Hordeum murinum</u>                                             | <u>10</u>        | <u>N</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 6. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 7. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 8. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                                                   |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Woody Vine Stratum (Plot size: _____)</b>                          |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                                              | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b><br>Yes _____ No <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                            |
| 2. _____                                                              | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                                                   |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| % Bare Ground in Herb Stratum <u>15</u> % Cover of Biotic Crust _____ |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Remarks:                                                              |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |

**SOIL**

Sampling Point: 53

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-2                                                                                                                        | 7.5 YR 2.5/3  | 97 | 5 YR 5/8       | 3 | C                 | PL               | Silty Clay |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/28/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 54  
 Investigator(s): L. Burris, A. Sennett, and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): flatland Local relief (concave, convex, none): slightly concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.4732422 Long: -121.172183962375 Datum: WGS84  
 Soil Map Unit Name: San Joaquin-Galt complex, 0 - 3% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br><br>Associated Feature: <u>Upland 01a</u><br>Slight depression in grassland. No change in vegetation from surrounding upland Grazing.                                                                                        |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____) | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------|------------------|-------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                        | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                                                         |
| 2. _____                        | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                        | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                        | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover             |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>_____ Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____                                                                             |
| _____ = Total Cover             |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover             |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover             |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover             |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover             |                  |                   |                  | <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| _____ = Total Cover             |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover             |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
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| _____ = Total Cover             |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover             |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover             |                  |                   |                  | <b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                               |
| _____ = Total Cover             |                  |                   |                  | % Bare Ground in Herb Stratum <u>15</u> % Cover of Biotic Crust <u>0</u>                                                                                                                                                                                                                                                                                                                                              |

Remarks:

**SOIL**

Sampling Point: 54

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-2                                                                                                                        | 7.5 YR 3/2    | 93 | 5 YR 5/8       | 7 | C                 | M/PL             | Silty clay |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/28/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 55  
 Investigator(s): L. Burris, A. Sennet, A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47518688 Long: -121.173043 Datum: WGS84  
 Soil Map Unit Name: Peters clay, 1 - 8% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Associated feature: SW 20. Small depression on hilltop. Grazing                                                                                                                                                              |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                          | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------------------------|------------------|-------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                 | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                                                                                |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| _____ = Total Cover                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>                          |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                                                 | _____            | _____             | _____            | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____                                                            |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b>                          |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. <u>Phalaris paradoxa</u>                                              | <u>10</u>        | <u>Y</u>          | <u>FAC</u>       | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 2. <u>Rumex crispus</u>                                                  | <u>15</u>        | <u>Y</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. <u>Festuca perennis</u>                                               | <u>20</u>        | <u>Y</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. <u>Eryngium castrense</u>                                             | <u>5</u>         | <u>N</u>          | <u>OBL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 6. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 7. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 8. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| <u>50</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Woody Vine Stratum (Plot size: _____)</b>                             |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                                                 | _____            | _____             | _____            | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.                                                                                                                                                                                                                                                                                 |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| _____ = Total Cover                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| % Bare Ground in Herb Stratum <u>50</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| Remarks:                                                                 |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |

Remarks:



**SOIL**

Sampling Point: 55

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |    |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|----|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |    |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-2                                                                                                                        | 7.5 Y/R 3/2   | 90 | 5 YR 4/6       | 10 | C                 | PL               | silty clay |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/30/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 56  
 Investigator(s): L. Burris and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): flatland Local relief (concave, convex, none): None Slope (%): 0  
 Subregion (LRR): C Lat: 38.4685419773286 Long: -121.17501438415 Datum: WGS84  
 Soil Map Unit Name: San Joaquin-Galt complex, 0 - 3% slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Remarks:<br>Point taken within SW-21. Grazed, gopher burrows                                                                                                                                                                                                                                      |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)           | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------|------------------|----------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                  | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                                                                                                                                                                                                      |
| 2. _____                                  | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. _____                                  | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                  | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| _____ = Total Cover                       |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Sapling/Shrub Stratum (Plot size: _____)  |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. _____                                  | _____            | _____                            | _____            | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____                                                                                                                                                                                  |
| 2. _____                                  | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. _____                                  | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                  | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. _____                                  | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| _____ = Total Cover                       |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Herb Stratum (Plot size: <u>5m x 5m</u> ) |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. <u>Hor. mar.</u>                       | <u>40</u>        | <u>Y</u>                         | <u>FAC</u>       | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 2. <u>Hol. vir.</u>                       | <u>15</u>        | <u>N</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. <u>Fes. per.</u>                       | <u>15</u>        | <u>N</u>                         | <u>OBL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. <u>Bro. hor.</u>                       | <u>5</u>         | <u>N</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. <u>Gas. phl.</u>                       | <u>5</u>         | <u>N</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 6. _____                                  | <u>5</u>         | <u>N</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 7. _____                                  | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 8. _____                                  | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <u>85</u> = Total Cover                   |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Woody Vine Stratum (Plot size: _____)     |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. _____                                  | _____            | _____                            | _____            | <b>Hydrophytic Vegetation Present?</b><br>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                        |
| 2. _____                                  | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| _____ = Total Cover                       |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| % Bare Ground in Herb Stratum <u>15</u>   |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Remarks:                                  |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

**SOIL**

Sampling Point: 56

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |   |                   |                  |            |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth (inches)                                                                                                      | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                     | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-2                                                                                                                 | 7.5YR 3/1     | 97 | 5YR 5/8        | 3 | C                 | PL/M             | silty clay |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
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|                                                                                                                     |               |    |                |   |                   |                  |            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Indicators for Problematic Hydric Soils <sup>3</sup> :                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5) (LRR C)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR D)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Sandy Mucky Mineral (S1)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Loamy Mucky Mineral (F1)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input checked="" type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Vernal Pools (F9) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR B)<br><input type="checkbox"/> Reduced Vertic (F18)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Other (Explain in Remarks)                                                                                                                                                                                                            |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|                                                                                             |                                                                                                 |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Restrictive Layer (if present):</b><br>Type: <u>hard pan</u><br>Depth (inches): <u>2</u> | <b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|

Remarks:

**HYDROLOGY**

| Wetland Hydrology Indicators:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Indicators (minimum of one required; check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Secondary Indicators (2 or more required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) (Nonriverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)<br><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)<br><input checked="" type="checkbox"/> Surface Soil Cracks (B6)<br><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Other (Explain in Remarks) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <input type="checkbox"/> Water Marks (B1) (Riverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Riverine)<br><input type="checkbox"/> Drift Deposits (B3) (Riverine)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> FAC-Neutral Test (D5)        |

|                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Field Observations:</b><br>Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe)    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ | <b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/30/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 57  
 Investigator(s): L. Burris and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatland Local relief (concave, convex, none): none Slope (%): 3  
 Subregion (LRR): C Lat: 38.4687873084898 Long: -121.175463876799 Datum: WGS84  
 Soil Map Unit Name: San Joaquin-Galt complex, 0 - 3% slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>Pit taken within upland swale                                                                                                                                                                                                                                                         |                                                                                                                     |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)           | Absolute % Cover | Dominant Species?                | Indicator Status |  |
|-------------------------------------------|------------------|----------------------------------|------------------|--|
| 1. _____                                  | _____            | _____                            | _____            |  |
| 2. _____                                  | _____            | _____                            | _____            |  |
| 3. _____                                  | _____            | _____                            | _____            |  |
| 4. _____                                  | _____            | _____                            | _____            |  |
| _____ = Total Cover                       |                  |                                  |                  |  |
| Sapling/Shrub Stratum (Plot size: _____)  |                  |                                  |                  |  |
| 1. _____                                  | _____            | _____                            | _____            |  |
| 2. _____                                  | _____            | _____                            | _____            |  |
| 3. _____                                  | _____            | _____                            | _____            |  |
| 4. _____                                  | _____            | _____                            | _____            |  |
| 5. _____                                  | _____            | _____                            | _____            |  |
| _____ = Total Cover                       |                  |                                  |                  |  |
| Herb Stratum (Plot size: <u>1m x 1m</u> ) |                  |                                  |                  |  |
| 1. <u>Bromus hordeaceus</u>               | 40               | Y                                | FACU             |  |
| 2. <u>Elymus capute-medusae</u>           | 40               | Y                                | UPL              |  |
| 3. <u>Holocarpha virgata</u>              | 15               | N                                | UPL              |  |
| 4. <u>Hordeum marinum</u>                 | 2.5              | N                                | FAC              |  |
| 5. <u>Gastridium phleoides</u>            | 2.5              | N                                | FACU             |  |
| 6. _____                                  | _____            | _____                            | _____            |  |
| 7. _____                                  | _____            | _____                            | _____            |  |
| 8. _____                                  | _____            | _____                            | _____            |  |
| _____ = Total Cover                       |                  |                                  |                  |  |
| Woody Vine Stratum (Plot size: _____)     |                  |                                  |                  |  |
| 1. _____                                  | _____            | _____                            | _____            |  |
| 2. _____                                  | _____            | _____                            | _____            |  |
| _____ = Total Cover                       |                  |                                  |                  |  |
| % Bare Ground in Herb Stratum <u>0</u>    |                  | % Cover of Biotic Crust <u>0</u> |                  |  |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 0 x 1 = \_\_\_\_\_  
 FACW species 0 x 2 = \_\_\_\_\_  
 FAC species 2.5 x 3 = 7.5  
 FACU species 42.5 x 4 = 170  
 UPL species 57.5 x 5 = 287.5  
 Column Totals: 100 (A) 465 (B)  
 Prevalence Index = B/A = 4.65

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

Remarks:

**SOIL**

Sampling Point: 57

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-5                                                                                                                        | 7.5 YR 3/2    | 93 | 5 YR 4/6       | 7 | C                 | M                | silty clay |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/30/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 58  
 Investigator(s): L. Burris and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): flatland Local relief (concave, convex, none): Concave Slope (%): None  
 Subregion (LRR): C Lat: 38.468890684568 Long: -121.176691671627 Datum: WGS84  
 Soil Map Unit Name: San Joaquin-Galt complex, 0 - 3% slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>Pit taken within wide shallow basin area                                                                                                                                                                                                                                              |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                          | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------------------------------------------------------------|------------------|-------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                 | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                                                                                                                                                     |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 3. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 4. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <u>0</u> = Total Cover                                                   |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>5</u> x 3 = <u>15</u><br>FACU species <u>2.5</u> x 4 = <u>100</u><br>UPL species <u>20</u> x 5 = <u>100</u><br>Column Totals: <u>50</u> (A) <u>215</u> (B)<br>Prevalence Index = B/A = <u>4.3</u>                                                                                                                       |
| Sapling/Shrub Stratum (Plot size: _____)                                 | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 1. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 3. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 4. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 5. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <u>0</u> = Total Cover                                                   |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Herb Stratum (Plot size: <u>1m x 1m</u> )                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 1. <u>Holocarpha virgata</u>                                             | <u>17.5</u>      | <u>Y</u>          | <u>UPL</u>       | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 2. <u>Tritileia laxa</u>                                                 | <u>2.5</u>       | <u>N</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 3. <u>Hypochaeris radicata</u>                                           | <u>2.5</u>       | <u>N</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 4. <u>Gastridium phleoides</u>                                           | <u>17.5</u>      | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 5. <u>Bromus hordeaceus</u>                                              | <u>2.5</u>       | <u>N</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 6. <u>Festuca myuros</u>                                                 | <u>2.5</u>       | <u>N</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 7. <u>Hordeum marinum</u>                                                | <u>2.5</u>       | <u>N</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 8. <u>Festuca perennis</u>                                               | <u>2.5</u>       | <u>N</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <u>50</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Woody Vine Stratum (Plot size: _____)                                    | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 1. _____                                                                 | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                             |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <u>0</u> = Total Cover                                                   |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| % Bare Ground in Herb Stratum <u>50</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Remarks:                                                                 |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/30/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 59  
 Investigator(s): L. Burris and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatland Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): C Lat: 38.46792084319 Long: -121.176086063914 Datum: WGS84  
 Soil Map Unit Name: San Joaquin-Galt complex, 0 - 3% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
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| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: VP-11                                                                                                                                                                                                                                                             |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |  |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|--|
| 1. _____                                                                | _____            | _____             | _____            |  |
| 2. _____                                                                | _____            | _____             | _____            |  |
| 3. _____                                                                | _____            | _____             | _____            |  |
| 4. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| Sapling/Shrub Stratum (Plot size: _____)                                |                  |                   |                  |  |
| 1. _____                                                                | _____            | _____             | _____            |  |
| 2. _____                                                                | _____            | _____             | _____            |  |
| 3. _____                                                                | _____            | _____             | _____            |  |
| 4. _____                                                                | _____            | _____             | _____            |  |
| 5. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| Herb Stratum (Plot size: <u>1m x 1m</u> )                               |                  |                   |                  |  |
| 1. <u>Elymus caput-medusae</u>                                          | <u>75</u>        | <u>Y</u>          | <u>UPL</u>       |  |
| 2. <u>Holocarpha virgata</u>                                            | <u>25</u>        | <u>Y</u>          | <u>UPL</u>       |  |
| 3. _____                                                                | _____            | _____             | _____            |  |
| 4. _____                                                                | _____            | _____             | _____            |  |
| 5. _____                                                                | _____            | _____             | _____            |  |
| 6. _____                                                                | _____            | _____             | _____            |  |
| 7. _____                                                                | _____            | _____             | _____            |  |
| 8. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: _____)                                   |                  |                   |                  |  |
| 1. _____                                                                | _____            | _____             | _____            |  |
| 2. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |  |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 0 x 3 = 0  
 FACU species 0 x 4 = 0  
 UPL species 100 x 5 = 500  
 Column Totals: 100 (A) 500 (B)  
 Prevalence Index = B/A = 5

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

Remarks:





## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/30/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 60  
 Investigator(s): L. Burris and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): C Lat: 38.4686856949598 Long: -121.1762503 Datum: WGS84  
 Soil Map Unit Name: San Joaquin-Galt complex, 0 - 3% slopes NWI classification: TBD

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>Within topographical depression on hillslope                                                                                                                                                                                                                                          |                                                                                                                     |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                               |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 0 = Total Cover                                                         |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>0</u> x 3 = <u>0</u><br>FACU species <u>25</u> x 4 = <u>120</u><br>UPL species <u>75</u> x 5 = <u>375</u><br>Column Totals: <u>100</u> (A) <u>495</u> (B)<br>Prevalence Index = B/A = <u>4.95</u> |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 0 = Total Cover                                                         |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| Herb Stratum (Plot size: <u>1m x 1m</u> )                               | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                     |
| 1. <u>Elymus capute-medusae</u>                                         | <u>50</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                     |
| 2. <u>Holocarpha ssp.</u>                                               | <u>25</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. <u>Bromus hordeaceus</u>                                             | <u>20</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. <u>Brodiaea elegans</u>                                              | <u>5</u>         | <u>N</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 100 = Total Cover                                                       |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 0 = Total Cover                                                         |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

Remarks:

**SOIL**

Sampling Point: 60

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |   |                   |                  |            |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth (inches)                                                                                                      | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                     | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-3"                                                                                                                | 7.5 YR 3/1    | 93 | 5 YR 4/6       | 7 | C                 | PL/M             | silty clay |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/30/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 61  
 Investigator(s): L. Burris and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): flatland Local relief (concave, convex, none): None Slope (%): 2  
 Subregion (LRR): C Lat: 38.4676270252347 Long: -121.176476181084 Datum: WGS84  
 Soil Map Unit Name: San Joaquin-Galt complex, 0 - 3% slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br><br>Associated Feature: SW23                                                                                                                                                                                                                                                          |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |  |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|--|
| 1. _____                                                                | _____            | _____             | _____            |  |
| 2. _____                                                                | _____            | _____             | _____            |  |
| 3. _____                                                                | _____            | _____             | _____            |  |
| 4. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| Sapling/Shrub Stratum (Plot size: _____)                                |                  |                   |                  |  |
| 1. _____                                                                | _____            | _____             | _____            |  |
| 2. _____                                                                | _____            | _____             | _____            |  |
| 3. _____                                                                | _____            | _____             | _____            |  |
| 4. _____                                                                | _____            | _____             | _____            |  |
| 5. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| Herb Stratum (Plot size: <u>1m x 1m</u> )                               |                  |                   |                  |  |
| 1. <u>Bromus hordeaceus</u>                                             | <u>75</u>        | <u>Y</u>          | <u>FACU</u>      |  |
| 2. <u>Holocarpha virgata</u>                                            | <u>25</u>        | <u>N</u>          | <u>UPL</u>       |  |
| 3. _____                                                                | _____            | _____             | _____            |  |
| 4. _____                                                                | _____            | _____             | _____            |  |
| 5. _____                                                                | _____            | _____             | _____            |  |
| 6. _____                                                                | _____            | _____             | _____            |  |
| 7. _____                                                                | _____            | _____             | _____            |  |
| 8. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: _____)                                   |                  |                   |                  |  |
| 1. _____                                                                | _____            | _____             | _____            |  |
| 2. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |  |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 0 x 3 = 0  
 FACU species 75 x 4 = 300  
 UPL species 25 x 5 = 125  
 Column Totals: 100 (A) 425 (B)  
 Prevalence Index = B/A = 4.25

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

Remarks:



**SOIL**

Sampling Point: 61

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-3                                                                                                                        | 7.5 YR 3/2    | 97 | 5 YR 4/6       | 3 | C                 | PL/M             | silty clay |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/30/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 66  
 Investigator(s): L. Burris and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Plateau Local relief (concave, convex, none): convex Slope (%): 0  
 Subregion (LRR): C Lat: 38.4734719 Long: -121.1762204 Datum: WGS84  
 Soil Map Unit Name: Peters clay, 1 - 8% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: SW66                                                                                                                                                                                                                                                              |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                                                                                                                                                                                                                                                                       |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <u>0</u> = Total Cover                                                  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>0</u> x 3 = <u>0</u><br>FACU species <u>77.5</u> x 4 = <u>290</u><br>UPL species <u>27.5</u> x 5 = <u>137.5</u><br>Column Totals: <u>100</u> (A) <u>427.5</u> (B)<br>Prevalence Index = B/A = <u>4.3</u>                                                                                                                                                                                                                                  |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Herb Stratum (Plot size: <u>1m x 1m</u> )                               | Absolute % Cover | Dominant Species? | Indicator Status | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.<br><br><b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| 1. <u>Holocarpha virgate</u>                                            | <u>25</u>        | <u>Y</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 2. <u>Bromus hordeaceus</u>                                             | <u>72.5</u>      | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 3. <u>Convolvulus arvensis</u>                                          | <u>2.5</u>       | <u>N</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <u>100</u> = Total Cover                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

Remarks:

**SOIL**

Sampling Point: 66

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |   |                   |                  |            |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth (inches)                                                                                                      | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                     | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-2                                                                                                                 | 7.5 YR 3/2    | 98 | 5 YR 4/6       | 2 | C                 | PL               | silty clay |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
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<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: hard pan  
 Depth (inches): 2"

Hydric Soil Present? Yes  No

Remarks:

Small mammal burrows

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (Nonriverine)
- Sediment Deposits (B2) (Nonriverine)
- Drift Deposits (B3) (Nonriverine)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): \_\_\_\_\_

Wetland Hydrology Present? Yes  No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/30/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 67  
 Investigator(s): L. Burris and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Plateau Local relief (concave, convex, none): convex Slope (%): 2  
 Subregion (LRR): C Lat: 38.4732869632782 Long: -121.175974427288 Datum: WGS84  
 Soil Map Unit Name: Peters clay, 1 - 8% slopes NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Within SW-26 (microdepression on plateau)                                                                                                                                                                                    |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                     |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| <u>0</u> = Total Cover                                                  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                     |
| Herb Stratum (Plot size: <u>1m x 1m</u> )                               | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                     |
| 1. <u>Rumex dentatus</u>                                                | <u>25</u>        | <u>Y</u>          | <u>FACW</u>      |                                                                                                                                                                                                                                                                                                                                     |
| 2. <u>Hordeum marinum (Unidentifiable thatch)</u>                       | _____            | <u>Y</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                     |
| 3. <u>Festuca perennis (Unidentifiable thatch)</u>                      | <u>75</u>        | <u>Y</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| <u>100</u> = Total Cover                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                     |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                     |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                     |

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

Remarks:  
 Heavily grazed



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/30/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 68  
 Investigator(s): L. Burris and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Plateau Local relief (concave, convex, none): convex Slope (%): 0  
 Subregion (LRR): C Lat: 38.4732715895606 Long: -121.175925837094 Datum: WGS84  
 Soil Map Unit Name: Peters clay, 1 - 8% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br><br>Associated Feature: SW26                                                                                                                                                                                                                                                          |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                            |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                          |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                          |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                          |
| <u>0</u> = Total Cover                                                  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>10</u> x 3 = <u>30</u><br>FACU species <u>65</u> x 4 = <u>260</u><br>UPL species <u>25</u> x 5 = <u>125</u><br>Column Totals: <u>100</u> (A) <u>415</u> (B)<br><br>Prevalence Index = B/A = <u>4.2</u> |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                          |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                          |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                          |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                          |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                          |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                          |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                          |
| Herb Stratum (Plot size: <u>1m x 1m</u> )                               | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                          |
| 1. <u>Holocarpha virgata</u>                                            | <u>25</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                          |
| 2. <u>Bromus hordeaceus</u>                                             | <u>65</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                          |
| 3. <u>Hordeum marinum</u>                                               | <u>10</u>        | <u>N</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                          |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                          |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                          |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                          |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                          |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                          |
| <u>100</u> = Total Cover                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                          |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                          |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                          |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                          |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                          |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                          |

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

Remarks:

**SOIL**

Sampling Point: 68

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-2                                                                                                                        | 7.5 YR 3/2    | 98 | 5 YR 4/6       | 2 | C                 | PL               | silty clay |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
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## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/30/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 69  
 Investigator(s): L. Burriss and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Plateau Local relief (concave, convex, none): convex Slope (%): 2  
 Subregion (LRR): C Lat: TBD Long: 38.4727056253697 Datum: -121.1757  
 Soil Map Unit Name: Peters clay, 1 - 8% slopes NWI classification: TBD

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated Feature: SW27                                                                                                                                                                                                                                                              |                                                                                                                     |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                                                                                                                                                     |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| _____ = Total Cover                                                     |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>                         |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 1. _____                                                                | _____            | _____             | _____            | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>15</u> x 3 = <u>15</u><br>FACU species <u>80</u> x 4 = <u>320</u><br>UPL species <u>15</u> x 5 = <u>75</u><br>Column Totals: <u>100</u> (A) <u>410</u> (B)<br>Prevalence Index = B/A = <u>4.1</u>                                                                                                                       |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b>                         |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 1. <u>Holocarpha virgata</u>                                            | <u>12.5</u>      | <u>N</u>          | <u>UPL</u>       | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 2. <u>Bromus hordeaceus</u>                                             | <u>8</u>         | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 3. <u>Hordeum marinum</u>                                               | <u>2.5</u>       | <u>N</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 4. <u>Trifolium hirtum</u>                                              | <u>2.5</u>       | <u>N</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 5. <u>Festuca perennis</u>                                              | <u>2.5</u>       | <u>N</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| _____ = Total Cover                                                     |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Woody Vine Stratum (Plot size: _____)</b>                            |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 1. _____                                                                | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| _____ = Total Cover                                                     |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Remarks:                                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/30/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 70  
 Investigator(s): L. Burris and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 5  
 Subregion (LRR): C Lat: 38.4771662777409 Long: -121.176513594024 Datum: WGS84  
 Soil Map Unit Name: Peters clay, 1 - 8% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Remarks:<br>Associated feature: SW 28                                                                                                                                                                                                                                                             |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                                                                                                                                                                                                                                                                       |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <u>0</u> = Total Cover                                                  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>0</u> x 3 = <u>0</u><br>FACU species <u>50</u> x 4 = <u>200</u><br>UPL species <u>50</u> x 5 = <u>250</u><br>Column Totals: <u>100</u> (A) <u>450</u> (B)<br>Prevalence Index = B/A = <u>4.5</u>                                                                                                                                                                                                                                          |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Herb Stratum (Plot size: <u>1m x 1m</u> )                               | Absolute % Cover | Dominant Species? | Indicator Status | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.<br><br><b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| 1. <u>Holocarpha virgata</u>                                            | <u>25</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 2. <u>Elymus caput-medusae</u>                                          | <u>25</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 3. <u>Bromus hordeaceus</u>                                             | <u>50</u>        | <u>Y</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <u>100</u> = Total Cover                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Remarks:                                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

**SOIL**

Sampling Point: 70

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |            |         |
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| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-2                                                                                                                        | 7.5 YR 3/1    | 98 | 5 YR 4/6       | 2 | C                 | PL               | silty clay |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/30/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 72  
 Investigator(s): L. Burriss and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): flatlands Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): C Lat: 38.4685789780434 Long: -121.175074969026 Datum: WGS84  
 Soil Map Unit Name: San Joaquin-Galt complex, 0 - 3% slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: SW21                                                                                                                                                                                                                                                              |                                                                                                                                |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)           | Absolute % Cover | Dominant Species?                | Indicator Status |                     |
|-------------------------------------------|------------------|----------------------------------|------------------|---------------------|
| 1. _____                                  |                  |                                  |                  |                     |
| 2. _____                                  |                  |                                  |                  |                     |
| 3. _____                                  |                  |                                  |                  |                     |
| 4. _____                                  |                  |                                  |                  |                     |
|                                           |                  |                                  |                  | _____ = Total Cover |
| Sapling/Shrub Stratum (Plot size: _____)  |                  |                                  |                  |                     |
| 1. _____                                  |                  |                                  |                  |                     |
| 2. _____                                  |                  |                                  |                  |                     |
| 3. _____                                  |                  |                                  |                  |                     |
| 4. _____                                  |                  |                                  |                  |                     |
| 5. _____                                  |                  |                                  |                  |                     |
|                                           |                  |                                  |                  | _____ = Total Cover |
| Herb Stratum (Plot size: <u>1m x 1m</u> ) |                  |                                  |                  |                     |
| 1. <u>Elymus capute-medusae</u>           | 45               | Y                                | UPL              |                     |
| 2. <u>Holocarpha virgata</u>              | 25               | Y                                | UPL              |                     |
| 3. <u>Bromus hordeaceus</u>               | 25               | Y                                | FACU             |                     |
| 4. <u>Brodiaea elegans</u>                | 2.5              | N                                | FACU             |                     |
| 5. <u>Tritileia laxa</u>                  | 2.5              | N                                | UPL              |                     |
| 6. _____                                  |                  |                                  |                  |                     |
| 7. _____                                  |                  |                                  |                  |                     |
| 8. _____                                  |                  |                                  |                  |                     |
|                                           |                  |                                  |                  | 100 = Total Cover   |
| Woody Vine Stratum (Plot size: _____)     |                  |                                  |                  |                     |
| 1. _____                                  |                  |                                  |                  |                     |
| 2. _____                                  |                  |                                  |                  |                     |
|                                           |                  |                                  |                  | 0 = Total Cover     |
| % Bare Ground in Herb Stratum <u>0</u>    |                  | % Cover of Biotic Crust <u>0</u> |                  |                     |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 3 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 0 x 3 = 0  
 FACU species 27.5 x 4 = 110  
 UPL species 72.5 x 5 = 362.5  
 Column Totals: 100 (A) 472.5 (B)  
 Prevalence Index = B/A = 47

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

Remarks:

**SOIL**

Sampling Point: 72

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-3                                                                                                                        | 7.5 YR 3/1    | 97 | 5 YR 3/8       | 3 | C                 | PL               | silty clay |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
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## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/30/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 73  
 Investigator(s): L. Burris and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatland Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): C Lat: 38.46794555 Long: -121.176199810475 Datum: WGS84  
 Soil Map Unit Name: San Joaquin-Galt complex, 0 - 3% slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Remarks:<br><br>Associated feature: VP-11 heavily grazed                                                                                                                                                                                                                                          |                                                                                                                     |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------|------------------|----------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                     |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 0 = Total Cover                                 |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. <u>Festuca perennis</u>                      | 30               | Y                                | FAC              |                                                                                                                                                                                                                                                                                                                                     |
| 2. <u>Eryngium castrense</u>                    | 15               | Y                                | OBL              |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 45 = Total Cover                                |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| % Bare Ground in Herb Stratum <u>55</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                     |

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

Remarks:

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |   |                   |                  |            |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth (inches)                                                                                                      | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                     | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-4                                                                                                                 | 7.5 YR 3/1    | 93 | 5 YR 5/8       | 7 | C                 | PL               | silty clay |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
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<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Indicators for Problematic Hydric Soils <sup>3</sup> :                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5) (LRR C)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR D)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Sandy Mucky Mineral (S1)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Loamy Mucky Mineral (F1)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input checked="" type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Vernal Pools (F9) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR B)<br><input type="checkbox"/> Reduced Vertic (F18)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Other (Explain in Remarks)                                                                                                                                                                                                            |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|                                                                                              |                                                                                                 |
|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Restrictive Layer (if present):</b><br>Type: <u>hard pan</u><br>Depth (inches): <u>4"</u> | <b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|

Remarks:  
1 inch deep organic layer

**HYDROLOGY**

| Wetland Hydrology Indicators:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Indicators (minimum of one required; check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Secondary Indicators (2 or more required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) (Nonriverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)<br><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)<br><input checked="" type="checkbox"/> Surface Soil Cracks (B6)<br><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Other (Explain in Remarks) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <input type="checkbox"/> Water Marks (B1) (Riverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Riverine)<br><input type="checkbox"/> Drift Deposits (B3) (Riverine)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> FAC-Neutral Test (D5)                   |

|                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                       |
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| <b>Field Observations:</b><br>Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ | <b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  
Remarks:  
Cattle hoof punches



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/30/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 74  
 Investigator(s): L. Burris and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatland Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): C Lat: 38.4676051352642 Long: -121.176340462636 Datum: WGS84  
 Soil Map Unit Name: San Joaquin-Galt complex, 0 - 3% slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
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| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Remarks:<br><br>Associated Feature: SW-23<br>Grazed.                                                                                                                                                                                                                                              |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)           | Absolute % Cover | Dominant Species?                | Indicator Status |  |
|-------------------------------------------|------------------|----------------------------------|------------------|--|
| 1. _____                                  | _____            | _____                            | _____            |  |
| 2. _____                                  | _____            | _____                            | _____            |  |
| 3. _____                                  | _____            | _____                            | _____            |  |
| 4. _____                                  | _____            | _____                            | _____            |  |
| _____ = Total Cover                       |                  |                                  |                  |  |
| Sapling/Shrub Stratum (Plot size: _____)  | Absolute % Cover | Dominant Species?                | Indicator Status |  |
| 1. _____                                  | _____            | _____                            | _____            |  |
| 2. _____                                  | _____            | _____                            | _____            |  |
| 3. _____                                  | _____            | _____                            | _____            |  |
| 4. _____                                  | _____            | _____                            | _____            |  |
| 5. _____                                  | _____            | _____                            | _____            |  |
| _____ = Total Cover                       |                  |                                  |                  |  |
| Herb Stratum (Plot size: <u>1m x 1m</u> ) | Absolute % Cover | Dominant Species?                | Indicator Status |  |
| 1. <u>Festuca perennis</u>                | <u>30</u>        | <u>Y</u>                         | <u>FAC</u>       |  |
| 2. <u>Hordeum marinum</u>                 | <u>20</u>        | <u>Y</u>                         | <u>FAC</u>       |  |
| 3. <u>Rumex dentatus</u>                  | <u>10</u>        | <u>N</u>                         | <u>FACW</u>      |  |
| 4. _____                                  | _____            | _____                            | _____            |  |
| 5. _____                                  | _____            | _____                            | _____            |  |
| 6. _____                                  | _____            | _____                            | _____            |  |
| 7. _____                                  | _____            | _____                            | _____            |  |
| 8. _____                                  | _____            | _____                            | _____            |  |
| _____ = Total Cover                       |                  |                                  |                  |  |
| Woody Vine Stratum (Plot size: _____)     | Absolute % Cover | Dominant Species?                | Indicator Status |  |
| 1. _____                                  | _____            | _____                            | _____            |  |
| 2. _____                                  | _____            | _____                            | _____            |  |
| _____ = Total Cover                       |                  |                                  |                  |  |
| % Bare Ground in Herb Stratum <u>40</u>   |                  | % Cover of Biotic Crust <u>0</u> |                  |  |
| Remarks:                                  |                  |                                  |                  |  |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species \_\_\_\_\_ x 1 = \_\_\_\_\_  
 FACW species 1 x 2 = \_\_\_\_\_  
 FAC species \_\_\_\_\_ x 3 = \_\_\_\_\_  
 FACU species \_\_\_\_\_ x 4 = \_\_\_\_\_  
 UPL species \_\_\_\_\_ x 5 = \_\_\_\_\_  
 Column Totals: 1 (A) \_\_\_\_\_ (B)  
 Prevalence Index = B/A = \_\_\_\_\_

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

**SOIL**

Sampling Point: 74

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |    |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|----|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |    |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-3                                                                                                                        | 7.5 YR 3/1    | 90 | 5 YR 5/8       | 10 | C                 | PL/M             | silty clay |         |
|                                                                                                                            |               |    |                |    |                   |                  |            |         |
|                                                                                                                            |               |    |                |    |                   |                  |            |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/30/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: SW-24b  
 Investigator(s): L. Burris and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Basin Local relief (concave, convex, none): concave Slope (%): 1  
 Subregion (LRR): C Lat: 38.4725695249179 Long: -121.179606495101 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
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| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Remarks:<br><br>Associated Feature: SW-24<br>Lightly grazed.                                                                                                                                                                                                                                      |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                          | Absolute % Cover | Dominant Species? | Indicator Status |  |
|--------------------------------------------------------------------------|------------------|-------------------|------------------|--|
| 1. _____                                                                 | _____            | _____             | _____            |  |
| 2. _____                                                                 | _____            | _____             | _____            |  |
| 3. _____                                                                 | _____            | _____             | _____            |  |
| 4. _____                                                                 | _____            | _____             | _____            |  |
| _____ = Total Cover                                                      |                  |                   |                  |  |
| Sapling/Shrub Stratum (Plot size: _____)                                 |                  |                   |                  |  |
| 1. _____                                                                 | _____            | _____             | _____            |  |
| 2. _____                                                                 | _____            | _____             | _____            |  |
| 3. _____                                                                 | _____            | _____             | _____            |  |
| 4. _____                                                                 | _____            | _____             | _____            |  |
| 5. _____                                                                 | _____            | _____             | _____            |  |
| _____ = Total Cover                                                      |                  |                   |                  |  |
| Herb Stratum (Plot size: <u>1m x 1m</u> )                                |                  |                   |                  |  |
| 1. <u>Hordeum marinum</u>                                                | <u>70</u>        | <u>Y</u>          | <u>FAC</u>       |  |
| 2. <u>Cynodon dactylon</u>                                               | <u>2.5</u>       | <u>N</u>          | <u>FACU</u>      |  |
| 3. <u>Rumex sp.</u>                                                      | <u>2.5</u>       | <u>N</u>          | <u>FACW</u>      |  |
| 4. _____                                                                 | _____            | _____             | _____            |  |
| 5. _____                                                                 | _____            | _____             | _____            |  |
| 6. _____                                                                 | _____            | _____             | _____            |  |
| 7. _____                                                                 | _____            | _____             | _____            |  |
| 8. _____                                                                 | _____            | _____             | _____            |  |
| _____ = Total Cover                                                      |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: _____)                                    |                  |                   |                  |  |
| 1. _____                                                                 | _____            | _____             | _____            |  |
| 2. _____                                                                 | _____            | _____             | _____            |  |
| _____ = Total Cover                                                      |                  |                   |                  |  |
| % Bare Ground in Herb Stratum <u>25</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |  |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)  
 Total Number of Dominant Species Across All Strata: 1 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species \_\_\_\_\_ x 1 = \_\_\_\_\_  
 FACW species \_\_\_\_\_ x 2 = \_\_\_\_\_  
 FAC species \_\_\_\_\_ x 3 = \_\_\_\_\_  
 FACU species \_\_\_\_\_ x 4 = \_\_\_\_\_  
 UPL species \_\_\_\_\_ x 5 = \_\_\_\_\_  
 Column Totals: \_\_\_\_\_ (A) \_\_\_\_\_ (B)  
 Prevalence Index = B/A = \_\_\_\_\_

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

Remarks:  
 Change in vegetation species composition





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/30/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 78  
 Investigator(s): L. Burriss and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): basin Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): C Lat: 38.47272807 Long: -121.1793498 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated Feature: SW24                                                                                                                                                                                                                                                              |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                          | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------------------------------------------------------|------------------|-------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                 | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                              |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>0</u> = Total Cover                                                   |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>5</u> x 3 = <u>15</u><br>FACU species <u>30</u> x 4 = <u>120</u><br>UPL species <u>50</u> x 5 = <u>250</u><br>Column Totals: <u>85</u> (A) <u>385</u> (B)<br>Prevalence Index = B/A = <u>4.5</u> |
| Sapling/Shrub Stratum (Plot size: _____)                                 | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>0</u> = Total Cover                                                   |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| Herb Stratum (Plot size: <u>1m x 1m</u> )                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. <u>Holocarpha virgata</u>                                             | <u>25</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. <u>Bromus hordeaceus</u>                                              | <u>30</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. <u>Elymus caput-medusae</u>                                           | <u>25</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. <u>Festuca perennis</u>                                               | <u>5</u>         | <u>N</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 6. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 7. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 8. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>85</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| Woody Vine Stratum (Plot size: _____)                                    | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>0</u> = Total Cover                                                   |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| % Bare Ground in Herb Stratum <u>15</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| Remarks:                                                                 |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/30/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 79  
 Investigator(s): L. Burris and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Plateau Local relief (concave, convex, none): convex Slope (%): 0  
 Subregion (LRR): C Lat: 38.473460359364 Long: -121.176163225498 Datum: WGS84  
 Soil Map Unit Name: Peters clay, 1 - 8% slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
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| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Remarks:<br><br>Associated feature: SW25<br>Heavily grazed.                                                                                                                                                                                                                                       |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                     | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------------------------|------------------|----------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                            | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66</u> (A/B)                                                                      |
| 2. _____                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                                 |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>     |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b>     |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. <u>Cynodon dactylon</u>                          | <u>5</u>         | <u>N</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                     |
| 2. <u>Bromus hordeaceus (Unidentifiable thatch)</u> | _____            | _____                            | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                     |
| 3. <u>Hordeum marinum (Unidentifiable thatch)</u>   | <u>77.5</u>      | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                     |
| 4. <u>Festuca perennis (Unidentifiable thatch)</u>  | _____            | _____                            | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                     |
| 5. <u>Convolvulus arvensis</u>                      | <u>2.5</u>       | <u>N</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                     |
| 6. _____                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 7. _____                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 8. _____                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| <b>Woody Vine Stratum (Plot size: _____)</b>        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| % Bare Ground in Herb Stratum <u>15</u>             |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                     |

Remarks:  
 Vegetation not identifiable due to grazing.

**SOIL**

Sampling Point: 79

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-2                                                                                                                        | 7.5 Y/R 3/2   | 95 | 5 YR 4/6       | 5 | C                 | M/PL             | silty clay |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/30/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 80  
 Investigator(s): L. Burris and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Flatland Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): C Lat: 38.4727755476728 Long: -121.175825493726 Datum: WGS84  
 Soil Map Unit Name: Peters clay, 1 - 8% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
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| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br><br>Associated Feature: <u>SW27</u><br>Moderately grazed                                                                                                                                                                                                                              |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                          | Absolute % Cover | Dominant Species?                                                                                          | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                |  |
|--------------------------------------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. _____                                                                 | _____            | _____                                                                                                      | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                                                                                |  |
| 2. _____                                                                 | _____            | _____                                                                                                      | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |  |
| 3. _____                                                                 | _____            | _____                                                                                                      | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |  |
| 4. _____                                                                 | _____            | _____                                                                                                      | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |  |
| _____ = Total Cover                                                      |                  |                                                                                                            |                  |                                                                                                                                                                                                                                                                                                                                                                                                |  |
| Sapling/Shrub Stratum (Plot size: _____)                                 | Absolute % Cover | Dominant Species?                                                                                          | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                |  |
| 1. _____                                                                 | _____            | _____                                                                                                      | _____            | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____                                                            |  |
| 2. _____                                                                 | _____            | _____                                                                                                      | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |  |
| 3. _____                                                                 | _____            | _____                                                                                                      | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |  |
| 4. _____                                                                 | _____            | _____                                                                                                      | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |  |
| 5. _____                                                                 | _____            | _____                                                                                                      | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |  |
| _____ = Total Cover                                                      |                  |                                                                                                            |                  |                                                                                                                                                                                                                                                                                                                                                                                                |  |
| Herb Stratum (Plot size: <u>1m x 1m</u> )                                | Absolute % Cover | Dominant Species?                                                                                          | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                |  |
| 1. <u>Hordeum marinum</u>                                                | <u>40</u>        | <u>Y</u>                                                                                                   | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |  |
| 2. <u>Festuca perennis</u>                                               | <u>25</u>        | <u>Y</u>                                                                                                   | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |  |
| 3. <u>Lactuca serriola</u>                                               | <u>1</u>         | <u>N</u>                                                                                                   | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |  |
| 4. <u>Holocarpha virgata</u>                                             | <u>9</u>         | <u>N</u>                                                                                                   | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |  |
| 5. _____                                                                 | _____            | _____                                                                                                      | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |  |
| 6. _____                                                                 | _____            | _____                                                                                                      | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |  |
| 7. _____                                                                 | _____            | _____                                                                                                      | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |  |
| 8. _____                                                                 | _____            | _____                                                                                                      | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |  |
| _____ = Total Cover                                                      |                  |                                                                                                            |                  |                                                                                                                                                                                                                                                                                                                                                                                                |  |
| Woody Vine Stratum (Plot size: _____)                                    | Absolute % Cover | Dominant Species?                                                                                          | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                |  |
| 1. _____                                                                 | _____            | _____                                                                                                      | _____            | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |  |
| 2. _____                                                                 | _____            | _____                                                                                                      | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |  |
| _____ = Total Cover                                                      |                  |                                                                                                            |                  |                                                                                                                                                                                                                                                                                                                                                                                                |  |
| % Bare Ground in Herb Stratum <u>25</u> % Cover of Biotic Crust <u>0</u> |                  | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |                  |                                                                                                                                                                                                                                                                                                                                                                                                |  |

Remarks:



## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 10/30/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 81  
 Investigator(s): L. Burris and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Peters clay, 1 - 8% slopes Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): C Lat: 38.4771516297374 Long: -121.176408253869 Datum: WGS84  
 Soil Map Unit Name: Peters clay, 1 - 8% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
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| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Remarks:<br><br>Associated Feature: SW-28<br>Heavily grazed.                                                                                                                                                                                                                                      |                                                                                                                     |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------|------------------|----------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                     |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 0 = Total Cover                                 |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. <u>Hordeum marinum</u>                       | 20               | Y                                | FAC              |                                                                                                                                                                                                                                                                                                                                     |
| 2. <u>Festuca perennis</u>                      | 20               | Y                                | FAC              |                                                                                                                                                                                                                                                                                                                                     |
| 3. <u>Rumex dentatus</u>                        | 2.5              | N                                | FACW             |                                                                                                                                                                                                                                                                                                                                     |
| 4. <u>??</u>                                    | 2.5              | N                                | FAC              |                                                                                                                                                                                                                                                                                                                                     |
| 5. <u>Polypogon monspeliensis</u>               | 2.5              | N                                | FACW             |                                                                                                                                                                                                                                                                                                                                     |
| 6. <u>Lythrum hyssopifolia</u>                  | 2.5              | N                                | OBL              |                                                                                                                                                                                                                                                                                                                                     |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 50 = Total Cover                                |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| % Bare Ground in Herb Stratum <u>50</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                     |

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

Remarks:

**SOIL**

Sampling Point: 81

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-3                                                                                                                        | 7.5 YR 3/1    | 95 | 5 YR 4/6       | 5 | C                 | M                | silty clay |         |
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|                                                                                                                            |               |    |                |   |                   |                  |            |         |



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/4/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 84  
 Investigator(s): P. Keating and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): C Lat: 38.47890103 Long: -121.1808173 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: PEM1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Remarks:<br>Associated feature: <u>SW-29</u><br>NWI classification <u>PEM1A = Freshwater Emergent Wetland</u>                                                                                                                                                                                     |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------|------------------|----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                         |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. <u>Festuca perennis</u>                      | <u>5</u>         | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| % Bare Ground in Herb Stratum <u>95</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                 |

Remarks:



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/4/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 85  
 Investigator(s): P. Keating and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): C Lat: 38.47898859 Long: -121.1808264 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: SW-29                                                                                                                                                                                                                                                             |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)           | Absolute % Cover | Dominant Species?                | Indicator Status |  |
|-------------------------------------------|------------------|----------------------------------|------------------|--|
| 1. _____                                  | _____            | _____                            | _____            |  |
| 2. _____                                  | _____            | _____                            | _____            |  |
| 3. _____                                  | _____            | _____                            | _____            |  |
| 4. _____                                  | _____            | _____                            | _____            |  |
| _____ = Total Cover                       |                  |                                  |                  |  |
| Sapling/Shrub Stratum (Plot size: _____)  |                  |                                  |                  |  |
| 1. _____                                  | _____            | _____                            | _____            |  |
| 2. _____                                  | _____            | _____                            | _____            |  |
| 3. _____                                  | _____            | _____                            | _____            |  |
| 4. _____                                  | _____            | _____                            | _____            |  |
| 5. _____                                  | _____            | _____                            | _____            |  |
| _____ = Total Cover                       |                  |                                  |                  |  |
| Herb Stratum (Plot size: <u>5m x 5m</u> ) |                  |                                  |                  |  |
| 1. <u>Bromus hordeaceus</u>               | <u>30</u>        | <u>Y</u>                         | <u>FACU</u>      |  |
| 2. <u>Hordeum marinum</u>                 | <u>20</u>        | <u>Y</u>                         | <u>FAC</u>       |  |
| 3. <u>Holocarpha virgata</u>              | <u>20</u>        | <u>Y</u>                         | <u>UPL</u>       |  |
| 4. <u>Trifolium hirtum</u>                | <u>15</u>        | <u>N</u>                         | <u>UPL</u>       |  |
| 5. <u>Festuca perennis</u>                | <u>15</u>        | <u>N</u>                         | <u>FAC</u>       |  |
| 6. _____                                  | _____            | _____                            | _____            |  |
| 7. _____                                  | _____            | _____                            | _____            |  |
| 8. _____                                  | _____            | _____                            | _____            |  |
| _____ = Total Cover                       |                  |                                  |                  |  |
| Woody Vine Stratum (Plot size: _____)     |                  |                                  |                  |  |
| 1. _____                                  | _____            | _____                            | _____            |  |
| 2. _____                                  | _____            | _____                            | _____            |  |
| _____ = Total Cover                       |                  |                                  |                  |  |
| % Bare Ground in Herb Stratum <u>0</u>    |                  | % Cover of Biotic Crust <u>0</u> |                  |  |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)  
 Total Number of Dominant Species Across All Strata: 3 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 35 x 3 = 105  
 FACU species 30 x 4 = 120  
 UPL species 35 x 5 = 175  
 Column Totals: 100 (A) 400 (B)  
 Prevalence Index = B/A = 4

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

Remarks:





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/4/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 86  
 Investigator(s): P. Keating and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): C Lat: 38.47897338 Long: -121.1833473 Datum: WGS84  
 Soil Map Unit Name: San Joaquin silt loam, 3 - 8% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: SW-30                                                                                                                                                                                                                                                             |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                               |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| <u>0</u> = Total Cover                                                  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>0</u> x 3 = <u>0</u><br>FACU species <u>25</u> x 4 = <u>100</u><br>UPL species <u>75</u> x 5 = <u>375</u><br>Column Totals: <u>100</u> (A) <u>475</u> (B)<br>Prevalence Index = B/A = <u>4.75</u> |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                               | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                     |
| 1. <u>Elymus caput-medusae</u>                                          | <u>50</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                     |
| 2. <u>Bromus hordeaceus</u>                                             | <u>25</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. <u>Holocarpha virgata</u>                                            | <u>25</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| <u>100</u> = Total Cover                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| Remarks:                                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |   |                   |                  |            |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth (inches)                                                                                                      | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                     | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-2                                                                                                                 | 10 YR 3/1     | 93 | 5 YR 4/6       | 7 | C                 | PL/M             | silty clay |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Indicators for Problematic Hydric Soils <sup>3</sup> :                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5) (LRR C)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR D)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Sandy Mucky Mineral (S1)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Loamy Mucky Mineral (F1)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input checked="" type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Vernal Pools (F9) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR B)<br><input type="checkbox"/> Reduced Vertic (F18)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Other (Explain in Remarks)                                                                                                                                                                                                            |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|                                                                                             |                                                                                                 |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Restrictive Layer (if present):</b><br>Type: <u>hard pan</u><br>Depth (inches): <u>2</u> | <b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|

Remarks:

**HYDROLOGY**

| Wetland Hydrology Indicators:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Indicators (minimum of one required; check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Secondary Indicators (2 or more required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) (Nonriverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)<br><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)<br><input type="checkbox"/> Surface Soil Cracks (B6)<br><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Other (Explain in Remarks) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <input type="checkbox"/> Water Marks (B1) (Riverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Riverine)<br><input type="checkbox"/> Drift Deposits (B3) (Riverine)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> FAC-Neutral Test (D5)                   |

|                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Field Observations:</b><br>Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ | <b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/4/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 88  
 Investigator(s): P. Keating and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 03  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): C Lat: 38.48444491 Long: -121.1886068 Datum: WGS84  
 Soil Map Unit Name: Bruella sandy loam, 2 to 5 percent slopes NWI classification: PUBFx-Freshwater Pond

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: n/a. Point taken within matrix of cattle trails, heavily disturbed. Low topographic depression within west facing slope.                                                                                                                                          |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                          | Absolute % Cover | Dominant Species? | Indicator Status |  |
|--------------------------------------------------------------------------|------------------|-------------------|------------------|--|
| 1. _____                                                                 | _____            | _____             | _____            |  |
| 2. _____                                                                 | _____            | _____             | _____            |  |
| 3. _____                                                                 | _____            | _____             | _____            |  |
| 4. _____                                                                 | _____            | _____             | _____            |  |
| 0 = Total Cover                                                          |                  |                   |                  |  |
| Sapling/Shrub Stratum (Plot size: _____)                                 |                  |                   |                  |  |
| 1. _____                                                                 | _____            | _____             | _____            |  |
| 2. _____                                                                 | _____            | _____             | _____            |  |
| 3. _____                                                                 | _____            | _____             | _____            |  |
| 4. _____                                                                 | _____            | _____             | _____            |  |
| 5. _____                                                                 | _____            | _____             | _____            |  |
| 0 = Total Cover                                                          |                  |                   |                  |  |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                                |                  |                   |                  |  |
| 1. <u>Festuca perennis</u>                                               | <u>15</u>        | <u>Y</u>          | <u>FAC</u>       |  |
| 2. <u>Elymus caput-medusae</u>                                           | <u>15</u>        | <u>Y</u>          | <u>UPL</u>       |  |
| 3. <u>Holocarpha virgata</u>                                             | <u>15</u>        | <u>Y</u>          | <u>UPL</u>       |  |
| 4. <u>Bromus hordeaceus</u>                                              | <u>15</u>        | <u>Y</u>          | <u>FACU</u>      |  |
| 5. _____                                                                 | _____            | _____             | _____            |  |
| 6. _____                                                                 | _____            | _____             | _____            |  |
| 7. _____                                                                 | _____            | _____             | _____            |  |
| 8. _____                                                                 | _____            | _____             | _____            |  |
| 60 = Total Cover                                                         |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: _____)                                    |                  |                   |                  |  |
| 1. _____                                                                 | _____            | _____             | _____            |  |
| 2. _____                                                                 | _____            | _____             | _____            |  |
| 0 = Total Cover                                                          |                  |                   |                  |  |
| % Bare Ground in Herb Stratum <u>40</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |  |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)  
 Total Number of Dominant Species Across All Strata: 4 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 25 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 15 x 3 = 45  
 FACU species 15 x 4 = 60  
 UPL species 30 x 5 = 150  
 Column Totals: 60 (A) 255 (B)  
 Prevalence Index = B/A = 4.25

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

Remarks:  
 Heavily grazed, unable to identify thatch





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/4/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 89  
 Investigator(s): P. Keating and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47555115 Long: -121.1825123 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Associated feature: SW-32. topographic relief within west facing slope that appears to sheet flow. Indistinct wetland boundaries                                                                                             |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------|------------------|----------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                                                                                |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                 |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____                                                            |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. <u>Alopecurus saccatus</u>                   | <u>10</u>        | <u>N</u>                         | <u>OBL</u>       | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 2. <u>Hordeum marinum</u>                       | <u>20</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. <u>Festuca perennis</u>                      | <u>10</u>        | <u>N</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. <u>Eryngium castrense</u>                    | <u>2.5</u>       | <u>N</u>                         | <u>OBL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. <u>Hypochaeris radicata</u>                  | <u>2.5</u>       | <u>N</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 6. <u>Holocarpha virgata</u>                    | <u>10</u>        | <u>N</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 7. <u>Gastrium phleoides</u>                    | <u>2.5</u>       | <u>N</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 8. <u>Bromus hordeaceus</u>                     | <u>2.5</u>       | <u>N</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                |
| 60 = Total Cover                                |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                        | _____            | _____                            | _____            | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| % Bare Ground in Herb Stratum <u>40</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____                                                                                                                                                                                                                                                                                                        |

Remarks:  
 Difficult to determine covers due to grazing of thatch.



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/4/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 91  
 Investigator(s): P. Keating and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47286657 Long: -121.1865352 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: R4SBC - Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: SW-34                                                                                                                                                                                                    |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------------------------|------------------|----------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)                                                                                                                         |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                        |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                        |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                        |
| 0 = Total Cover                                 |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>25</u> x 3 = <u>75</u><br>FACU species <u>50</u> x 4 = <u>200</u><br>UPL species <u>25</u> x 5 = <u>125</u><br>Column Totals: <u>100</u> (A) <u>400</u> (B)<br><br>Prevalence Index = B/A = <u>4</u> |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                        |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                        |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                        |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                        |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                        |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                        |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                        |
| 1. <u>Bromus hordeaceus</u>                     | <u>50</u>        | <u>Y</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                        |
| 2. <u>Festuca perennis</u>                      | <u>25</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                        |
| 3. <u>Holocarpha virgata</u>                    | <u>25</u>        | <u>Y</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                        |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                        |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                        |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                        |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                        |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                        |
| 100 = Total Cover                               |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                        |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                        |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                        |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                        |
| % Bare Ground in Herb Stratum <u>0</u>          |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                                                                        |
| Remarks:                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                        |

**SOIL**

Sampling Point: 91

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |         |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|---------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |         |
| 0-3                                                                                                                        | 10 YR 3/1     | 97 | 5 YR 4/4       | 3 | C                 | PL               | CL      |         |
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|                                                                                                                            |               |    |                |   |                   |                  |         |         |



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/4/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 92  
 Investigator(s): P. Keating and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): C Lat: 38.47875207 Long: -121.1831794 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 0 - 2% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Remarks:<br>Associated feature: SW-30                                                                                                                                                                                                                                                             |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------|------------------|----------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>4</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                                                                                        |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                 |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. <u>Festuca perennis</u>                      | <u>1</u>         | <u>Y</u>                         | <u>FAC</u>       | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 2. <u>Hordeum marinum</u>                       | <u>1</u>         | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. <u>Lythrum hyssopifolia</u>                  | <u>1</u>         | <u>Y</u>                         | <u>OBL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. <u>Polygonum aviculare</u>                   | <u>1</u>         | <u>Y</u>                         | <u>FACW</u>      |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. <u>Psilocarphus sp.</u>                      | <u>.5</u>        | <u>N</u>                         | <u>OBL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 6. <u>Eryngium castrense</u>                    | <u>.5</u>        | <u>N</u>                         | <u>OBL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                        | _____            | _____                            | _____            | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| % Bare Ground in Herb Stratum <u>95</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>                                                                                                                                                                                                                                                                                     |
| Remarks:                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |

**SOIL**

Sampling Point: 92

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |   |                   |                  |            |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth (inches)                                                                                                      | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                     | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-2                                                                                                                 | 10 YR 3/1     | 97 | 5 YR 4/6       | 3 | C                 | PL/M             | silty clay |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Indicators for Problematic Hydric Soils <sup>3</sup> :                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5) (LRR C)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR D)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Sandy Mucky Mineral (S1)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Loamy Mucky Mineral (F1)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input checked="" type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Vernal Pools (F9) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR B)<br><input type="checkbox"/> Reduced Vertic (F18)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Other (Explain in Remarks)                                                                                                                                                                                                            |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|                                                                                             |                                                                                                 |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Restrictive Layer (if present):</b><br>Type: <u>hard pan</u><br>Depth (inches): <u>2</u> | <b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|

Remarks:

**HYDROLOGY**

| Wetland Hydrology Indicators:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Indicators (minimum of one required; check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Secondary Indicators (2 or more required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) (Nonriverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)<br><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)<br><input checked="" type="checkbox"/> Surface Soil Cracks (B6)<br><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Other (Explain in Remarks) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <input type="checkbox"/> Water Marks (B1) (Riverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Riverine)<br><input type="checkbox"/> Drift Deposits (B3) (Riverine)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> FAC-Neutral Test (D5)        |

|                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Field Observations:</b><br>Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe)    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ | <b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/4/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 93  
 Investigator(s): P. Keating and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 10  
 Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): concave Slope (%): 3  
 Subregion (LRR): C Lat: 38.47481668 Long: -121.1873112 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 0 - 2% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Remarks:<br>Associated feature: SW-31. Feature drains into "freshwater emergent wetland" (Basin- 01)                                                                                                                                                                                              |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                                                                                                                              | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                                                                                                                     | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)                                                                          |
| 2. _____                                                                                                                                                                     | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                                                                                                                                                     | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                                                                                                                                                     | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 0 = Total Cover                                                                                                                                                              |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>                                                                                                                              |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                                                                                                                                                     | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                                                                                                                                                     | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                                                                                                                                                     | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                                                                                                                                                     | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                                                                                                                                                     | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 0 = Total Cover                                                                                                                                                              |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b>                                                                                                                              |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. <u>Polygonum aviculare</u>                                                                                                                                                | <u>30</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 2. <u>Elymus caput-medusae</u>                                                                                                                                               | <u>10</u>        | <u>Y</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 3. <u>Holocarpha virgata</u>                                                                                                                                                 | <u>5</u>         | <u>N</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 4. <u>Phyla nodiflora</u>                                                                                                                                                    | <u>5</u>         | <u>N</u>                         | <u>FACW</u>      |                                                                                                                                                                                                                                                                                                                                 |
| 5. <u>Bromus hordeaceus</u>                                                                                                                                                  | <u>2.5</u>       | <u>N</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                 |
| 6. <u>Festuca perennis</u>                                                                                                                                                   | <u>2.5</u>       | <u>N</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 7. <u>Hordeum marinum</u>                                                                                                                                                    | <u>2.5</u>       | <u>N</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 8. <u>Polypogon monspeliensis</u>                                                                                                                                            | <u>2.5</u>       | <u>N</u>                         | <u>FACW</u>      |                                                                                                                                                                                                                                                                                                                                 |
| 60 = Total Cover                                                                                                                                                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Woody Vine Stratum (Plot size: _____)</b>                                                                                                                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                                                                                                                                                     | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                                                                                                                                                     | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 0 = Total Cover                                                                                                                                                              |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| % Bare Ground in Herb Stratum <u>40</u>                                                                                                                                      |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                 |
| Remarks:<br>Change in vegetation species composition between ID-02, SW-30, and UPL. Late season upland vegetation has moved into site. Inundation visible on aerial imagery. |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |

Remarks:  
 Change in vegetation species composition between ID-02, SW-30, and UPL. Late season upland vegetation has moved into site. Inundation visible on aerial imagery.

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |   |                   |                  |            |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth (inches)                                                                                                      | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                     | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-2                                                                                                                 | 10 YR 3/1     | 95 | 5 YR 4/6       | 5 | C                 | PL/M             | silty clay |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Indicators for Problematic Hydric Soils <sup>3</sup> :                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5) (LRR C)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR D)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Sandy Mucky Mineral (S1)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Loamy Mucky Mineral (F1)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input checked="" type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Vernal Pools (F9) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR B)<br><input type="checkbox"/> Reduced Vertic (F18)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Other (Explain in Remarks)                                                                                                                                                                                                            |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|                                                                                             |                                                                                                 |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Restrictive Layer (if present):</b><br>Type: <u>hard pan</u><br>Depth (inches): <u>2</u> | <b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|

Remarks:

**HYDROLOGY**

| Wetland Hydrology Indicators:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Indicators (minimum of one required; check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Secondary Indicators (2 or more required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) (Nonriverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)<br><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)<br><input checked="" type="checkbox"/> Surface Soil Cracks (B6)<br><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Other (Explain in Remarks) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <input type="checkbox"/> Water Marks (B1) (Riverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Riverine)<br><input type="checkbox"/> Drift Deposits (B3) (Riverine)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> FAC-Neutral Test (D5)                   |

|                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Field Observations:</b><br>Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe)    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ | <b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/4/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 94  
 Investigator(s): P. Keating and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 10  
 Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): C Lat: 38.47506907 Long: -121.1874411 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 0 - 2% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: SW-31                                                                                                                                                                                                                                                             |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                                                                                                                                                                                                                                                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                                                                                                                                                                                                                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>.5</u> (A/B)                                                                                                                          |
| 2. _____                                                                                                                                                                                                                                                                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 3. _____                                                                                                                                                                                                                                                                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 4. _____                                                                                                                                                                                                                                                                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 0 = Total Cover                                                                                                                                                                                                                                                                                 |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>35</u> x 3 = <u>105</u><br>FACU species <u>25</u> x 4 = <u>100</u><br>UPL species <u>10</u> x 5 = <u>50</u><br>Column Totals: <u>75</u> (A) <u>255</u> (B)<br><br>Prevalence Index = B/A = <u>3.4</u> |
| 0 = Total Cover                                                                                                                                                                                                                                                                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>                                                                                                                                                                                                                                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                         |
| 1. _____                                                                                                                                                                                                                                                                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 2. _____                                                                                                                                                                                                                                                                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 3. _____                                                                                                                                                                                                                                                                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 4. _____                                                                                                                                                                                                                                                                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 5. _____                                                                                                                                                                                                                                                                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 0 = Total Cover                                                                                                                                                                                                                                                                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b>                                                                                                                                                                                                                                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                         |
| 1. <u>Holocarpha virgata</u>                                                                                                                                                                                                                                                                    | <u>10</u>        | <u>N</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                         |
| 2. <u>Bromus hordeaceus</u>                                                                                                                                                                                                                                                                     | <u>25</u>        | <u>Y</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                         |
| 3. <u>Festuca perennis</u>                                                                                                                                                                                                                                                                      | <u>25</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                         |
| 4. <u>Hordeum marinum</u>                                                                                                                                                                                                                                                                       | <u>10</u>        | <u>N</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                         |
| 5. _____                                                                                                                                                                                                                                                                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 6. _____                                                                                                                                                                                                                                                                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 7. _____                                                                                                                                                                                                                                                                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 8. _____                                                                                                                                                                                                                                                                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 75 = Total Cover                                                                                                                                                                                                                                                                                |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Woody Vine Stratum (Plot size: _____)</b>                                                                                                                                                                                                                                                    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                         |
| 1. _____                                                                                                                                                                                                                                                                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 2. _____                                                                                                                                                                                                                                                                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 0 = Total Cover                                                                                                                                                                                                                                                                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                         |
| % Bare Ground in Herb Stratum <u>25</u>                                                                                                                                                                                                                                                         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                                                                         |
| Remarks:                                                                                                                                                                                                                                                                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                         |
| <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.                                                                                                                                                                                  |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                                                                                                                                                                                      |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                         |



## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/4/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 95  
 Investigator(s): P. Keating and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 03  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): convex Slope (%): 2  
 Subregion (LRR): C Lat: 38.4818566 Long: -121.1952326 Datum: WGS84  
 Soil Map Unit Name: Reiff fine sandy loam, 0 - 2% slopes, occasionally flooded NWI classification: PEM1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                                                                                   |                                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: n/a<br>Point taken within western facing slope above ID-02.<br>NWI classification PEM1C = Freshwater Emergent Wetland                                                                                                                                             |                                                                                                           |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                                          | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------------------------------------------------------------|------------------|-------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                 | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)                                                                                                                            |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                           |
| 3. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                           |
| 4. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                           |
| _____ = Total Cover                                                      |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>25</u> x 3 = <u>75</u><br>FACU species <u>50</u> x 4 = <u>200</u><br>UPL species <u>25</u> x 5 = <u>125</u><br>Column Totals: <u>100</u> (A) <u>400</u> (B)<br><br>Prevalence Index = B/A = <u>9.6`</u> |
| Sapling/Shrub Stratum (Plot size: _____)                                 | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                           |
| 1. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                           |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                           |
| 3. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                           |
| 4. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                           |
| 5. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                           |
| _____ = Total Cover                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                           |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                           |
| 1. <u>Festuca perennis</u>                                               | <u>25</u>        | <u>Y</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                           |
| 2. <u>Bromus hordeaceus</u>                                              | <u>50</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                           |
| 3. <u>Holocarpha virgata</u>                                             | <u>25</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                           |
| 4. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                           |
| 5. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                           |
| 6. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                           |
| 7. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                           |
| 8. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                           |
| _____ = Total Cover                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                           |
| Woody Vine Stratum (Plot size: _____)                                    | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                           |
| 1. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                           |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                           |
| _____ = Total Cover                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                           |
| % Bare Ground in Herb Stratum <u>25</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                           |

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

Remarks:  
 No change in vegetation throughout slope.





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/4/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 97  
 Investigator(s): P. Keating and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): C Lat: 38.47572943 Long: -121.1824047 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 2 - 5% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>Upland point to 89 (SW-32)                                                                                                                                                                                                                                                            |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                          | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------------------------------------|------------------|-------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                 | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)                                                                                                                         |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                        |
| 3. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                        |
| 4. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                        |
| _____ = Total Cover                                                      |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>25</u> x 3 = <u>75</u><br>FACU species <u>50</u> x 4 = <u>200</u><br>UPL species <u>25</u> x 5 = <u>125</u><br>Column Totals: <u>100</u> (A) <u>400</u> (B)<br><br>Prevalence Index = B/A = <u>4</u> |
| Sapling/Shrub Stratum (Plot size: _____)                                 | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                        |
| 1. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                        |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                        |
| 3. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                        |
| 4. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                        |
| 5. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                        |
| _____ = Total Cover                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                        |
| Herb Stratum (Plot size: <u>1m x 1m</u> )                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                        |
| 1. <u>Holocarpha virgata</u>                                             | <u>25</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                        |
| 2. <u>Bromus hordeaceus</u>                                              | <u>50</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                        |
| 3. <u>Festuca perennis</u>                                               | <u>25</u>        | <u>Y</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                        |
| 4. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                        |
| 5. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                        |
| 6. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                        |
| 7. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                        |
| 8. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                        |
| _____ = Total Cover                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                        |
| Woody Vine Stratum (Plot size: _____)                                    | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                        |
| 1. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                        |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                        |
| _____ = Total Cover                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                        |
| % Bare Ground in Herb Stratum <u>25</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                        |

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

Remarks:

**SOIL**

Sampling Point: 97

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |   |                   |                  |         |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches)                                                                                                      | Matrix        |    | Redox Features |   |                   |                  | Texture | Remarks |
|                                                                                                                     | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |         |
| 0-2                                                                                                                 | 10 YR 3/1     | 99 | 5 YR 4/6       | 1 | C                 | PL               | C       |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Indicators for Problematic Hydric Soils <sup>3</sup> :                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5) (LRR C)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR D)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Sandy Mucky Mineral (S1)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Loamy Mucky Mineral (F1)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Vernal Pools (F9) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR B)<br><input type="checkbox"/> Reduced Vertic (F18)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Other (Explain in Remarks)                                                                                                                                                                                                 |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|                                                                                             |                                                                                                 |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Restrictive Layer (if present):</b><br>Type: <u>hard pan</u><br>Depth (inches): <u>2</u> | <b>Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|

Remarks:

**HYDROLOGY**

| Wetland Hydrology Indicators:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Indicators (minimum of one required; check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Secondary Indicators (2 or more required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) (Nonriverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)<br><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)<br><input checked="" type="checkbox"/> Surface Soil Cracks (B6)<br><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Other (Explain in Remarks) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <input type="checkbox"/> Water Marks (B1) (Riverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Riverine)<br><input type="checkbox"/> Drift Deposits (B3) (Riverine)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> FAC-Neutral Test (D5)                   |

|                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Field Observations:</b><br>Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe)    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ | <b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/4/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 98  
 Investigator(s): P. Keating and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): drainage Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47293207 Long: -121.185974 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: R4SBC - Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Associated feature: SW-33                                                                                                                                                                                                    |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                                       | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet:                                                                                                   |
|-----------------------------------------------------------------------|------------------|-------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                              | _____            | _____             | _____            | Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)                                                         |
| 2. _____                                                              | _____            | _____             | _____            | Total Number of Dominant Species Across All Strata: <u>3</u> (B)                                                            |
| 3. _____                                                              | _____            | _____             | _____            | Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67</u> (A/B)                                                     |
| 4. _____                                                              | _____            | _____             | _____            |                                                                                                                             |
| 0 = Total Cover                                                       |                  |                   |                  |                                                                                                                             |
| Sapling/Shrub Stratum (Plot size: _____)                              | Absolute % Cover | Dominant Species? | Indicator Status | Prevalence Index worksheet:                                                                                                 |
| 1. _____                                                              | _____            | _____             | _____            | Total % Cover of: _____ Multiply by: _____                                                                                  |
| 2. _____                                                              | _____            | _____             | _____            | OBL species _____ x 1 = _____                                                                                               |
| 3. _____                                                              | _____            | _____             | _____            | FACW species _____ x 2 = _____                                                                                              |
| 4. _____                                                              | _____            | _____             | _____            | FAC species _____ x 3 = _____                                                                                               |
| 5. _____                                                              | _____            | _____             | _____            | FACU species _____ x 4 = _____                                                                                              |
| 0 = Total Cover                                                       |                  |                   |                  | UPL species _____ x 5 = _____                                                                                               |
|                                                                       |                  |                   |                  | Column Totals: _____ (A) _____ (B)                                                                                          |
|                                                                       |                  |                   |                  | Prevalence Index = B/A = _____                                                                                              |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                             | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Indicators:                                                                                          |
| 1. <u>Festuca perennis</u>                                            | <u>15</u>        | <u>Y</u>          | <u>FAC</u>       | <input checked="" type="checkbox"/> Dominance Test is >50%                                                                  |
| 2. <u>Hordeum marinum</u>                                             | <u>5</u>         | <u>Y</u>          | <u>FAC</u>       | <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>                                                              |
| 3. <u>Amaranthus albus</u>                                            | <u>5</u>         | <u>Y</u>          | <u>UPL</u>       | <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) |
| 4. _____                                                              | _____            | _____             | _____            | <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)                                          |
| 5. _____                                                              | _____            | _____             | _____            |                                                                                                                             |
| 6. _____                                                              | _____            | _____             | _____            |                                                                                                                             |
| 7. _____                                                              | _____            | _____             | _____            |                                                                                                                             |
| 8. _____                                                              | _____            | _____             | _____            |                                                                                                                             |
| 25 = Total Cover                                                      |                  |                   |                  |                                                                                                                             |
| Woody Vine Stratum (Plot size: _____)                                 | Absolute % Cover | Dominant Species? | Indicator Status | Footnote:                                                                                                                   |
| 1. _____                                                              | _____            | _____             | _____            | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.              |
| 2. _____                                                              | _____            | _____             | _____            |                                                                                                                             |
| 0 = Total Cover                                                       |                  |                   |                  |                                                                                                                             |
| % Bare Ground in Herb Stratum _____ % Cover of Biotic Crust <u>75</u> |                  |                   |                  |                                                                                                                             |

Remarks:  
 Amaranthus albus still green, watered from cattle trough?

**SOIL**

Sampling Point: 98

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |    |                   |                  |         |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|----|-------------------|------------------|---------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |    |                   |                  | Texture | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |         |         |
| 0-4                                                                                                                        | 10 YR 3/1     | 70 | 5 YR 4/4       | 30 | C                 | M                | CL      |         |
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## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/4/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 99  
 Investigator(s): P. Keating and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): C Lat: 38.47299336 Long: -121.1859926 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>Upland point to 98 (SW-33)                                                                                                                                                                                                                                                            |                                                                                                                     |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                                |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                              |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                              |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                              |
| <u>0</u> = Total Cover                                                  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>2.5</u> x 3 = <u>7.5</u><br>FACU species <u>77.5</u> x 4 = <u>310</u><br>UPL species <u>15</u> x 5 = <u>75</u><br>Column Totals: <u>95</u> (A) <u>392.5</u> (B)<br><br>Prevalence Index = B/A = <u>4.1</u> |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                              |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                              |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                              |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                              |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                              |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                              |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                              |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                               | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                              |
| 1. <u>Bromus hordeaceus</u>                                             | <u>75</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                              |
| 2. <u>Holocarpha virgata</u>                                            | <u>12.5</u>      | <u>N</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                              |
| 3. <u>Amaranthus albus</u>                                              | <u>2.5</u>       | <u>N</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                              |
| 4. <u>Erodium cicutarium</u>                                            | <u>2.5</u>       | <u>N</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                              |
| 5. <u>Hordeum marinum</u>                                               | <u>2.5</u>       | <u>N</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                              |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                              |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                              |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                              |
| <u>95</u> = Total Cover                                                 |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                              |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                              |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                              |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                              |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                              |
| % Bare Ground in Herb Stratum <u>5</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                              |
| Remarks:                                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                              |

**SOIL**

Sampling Point: 99

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |         |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|---------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |         |
| 0-2                                                                                                                        | 10 YR 3/2     | 95 | 5 YR 4/4       | 5 | C                 | PL               | CL      |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/4/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 100  
 Investigator(s): P. Keating and A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): C Lat: 38.47284762 Long: -121.1865161 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: R4SBC - Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Remarks:<br>Within SW-34                                                                                                                                                                                                                                                                          |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------|------------------|----------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                                                                                        |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                 |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. <u>Festuca perennis</u>                      | <u>2.5</u>       | <u>N</u>                         | <u>FAC</u>       | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 2. <u>Hordeum marinum</u>                       | <u>2.5</u>       | <u>N</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. <u>Lythrum hyssopifolia</u>                  | <u>10</u>        | <u>Y</u>                         | <u>OBL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. <u>Amaranthus albus</u>                      | <u>2.5</u>       | <u>N</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. <u>Erysimum capitatum</u>                    | <u>2.5</u>       | <u>N</u>                         | <u>OBL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 6. <u>Lactuca serriola</u>                      | <u>2.5</u>       | <u>N</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 7. <u>Elymus caput-medusae</u>                  | <u>2.5</u>       | <u>N</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 25 = Total Cover                                |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                        | _____            | _____                            | _____            | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| % Bare Ground in Herb Stratum <u>75</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>                                                                                                                                                                                                                                                                                     |
| Remarks:                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |

**SOIL**

Sampling Point: 100

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|----------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
|                | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-2            | 10 YR 3/1     | 95 | 5 YR 4/4       | 5 |                   |                  | Silty clay |         |
|                |               |    |                |   |                   |                  |            |         |
|                |               |    |                |   |                   |                  |            |         |
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<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: hard pan  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

Manganese deposits approximately 2?

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (Nonriverine)
- Sediment Deposits (B2) (Nonriverine)
- Drift Deposits (B3) (Nonriverine)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_

Wetland Hydrology Present? Yes  No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/9/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 104  
 Investigator(s): A. Sennett and A. Crawford Section, Township, Range: Township 7N / Range 7E / Section 03  
 Landform (hillslope, terrace, etc.): Terrace (river) Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.48444491 Long: -121.1886068 Datum: WGS84  
 Soil Map Unit Name: Bruella sandy loam, 2 to 5 percent slopes NWI classification: PUBFx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br><br>River Terrace next to sac. River in northern extent of project site. Mapped as wetland by SSHCP<br>NWI Classification: PUBFx - Freshwater Pond                                                                           |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------|------------------|----------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                                                         |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                             |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>_____ Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____                                                                             |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b> |                  |                                  |                  | <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Bromus hordeaceus</u>                     | <u>25</u>        | <u>Y</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. <u>Elymus caput-medusae</u>                  | <u>25</u>        | <u>Y</u>                         | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. <u>Erodium cicutarium</u>                    | <u>10</u>        | <u>N</u>                         | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. <u>Carduus pycnocephalus</u>                 | <u>10</u>        | <u>N</u>                         | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. <u>Torilis arvensis</u>                      | <u>10</u>        | <u>N</u>                         | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 6. <u>Rumex crispus</u>                         | <u>5</u>         | <u>N</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 7. <u>Epilobium ciliatum</u>                    | <u>5</u>         | <u>N</u>                         | <u>FACW</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  | <b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                               |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| % Bare Ground in Herb Stratum <u>10</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Remarks:                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/11/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 105  
 Investigator(s): A. Sennett and A. Crawford Section, Township, Range: Township 7N / Range 7E / Section 10  
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Convex-concave Slope (%): .5  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.48155559 Long: -121.1884805 Datum: WGS84  
 Soil Map Unit Name: Bruella sandy loam, 2 to 5 percent slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Area mapped as wetland by sshcp                                                                                                                                                                                              |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                                                                                                                                                                                                                                                                                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                                                                                                                                                                                                                                                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                         |
| 2. _____                                                                                                                                                                                                                                                                                                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                                                                                                                                                                                                                                                                                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                                                                                                                                                                                                                                                                                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                                                                                                                                                                                                                                                                                                             |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| _____ = Total Cover                                                                                                                                                                                                                                                                                                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>                                                                                                                                                                                                                                                                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                                                                                                                                                                                                                                                                                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                                                                                                                                                                                                                                                                                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                                                                                                                                                                                                                                                                                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                                                                                                                                                                                                                                                                                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                                                                                                                                                                                                                                                                                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                                                                                                                                                                                                                                                                                                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Herb Stratum (Plot size: <u>5m x 5 m</u>)</b>                                                                                                                                                                                                                                                                                |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. <u>Hordeum marinum</u>                                                                                                                                                                                                                                                                                                       | <u>30</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 2. <u>Festuca perennis</u>                                                                                                                                                                                                                                                                                                      | <u>20</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 3. <u>Bromus diandrus</u>                                                                                                                                                                                                                                                                                                       | <u>5</u>         | <u>N</u>                         | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                 |
| 4. <u>Avena sp.</u>                                                                                                                                                                                                                                                                                                             | <u>2</u>         | <u>N</u>                         | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                                                                                                                                                                                                                                                                                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 6. _____                                                                                                                                                                                                                                                                                                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 7. _____                                                                                                                                                                                                                                                                                                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 8. _____                                                                                                                                                                                                                                                                                                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                                                                                                                                                                                                                                                                                                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Woody Vine Stratum (Plot size: _____)</b>                                                                                                                                                                                                                                                                                    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                                                                                                                                                                                                                                                                                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                                                                                                                                                                                                                                                                                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                                                                                                                                                                                                                                                                                                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| % Bare Ground in Herb Stratum <u>43</u>                                                                                                                                                                                                                                                                                         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input checked="" type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.                                                                                                                                                                                                                  |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____                                                                                                                                                                                                                                         |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |

Remarks:  
 Bare ground due to severe cattle grazing and trampling





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/9/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 107  
 Investigator(s): A, Sennett and A. Crawford Section, Township, Range: Township 7N / Range 7E / Section 10  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave convex Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.48108972 Long: -121.1892092 Datum: WGS84  
 Soil Map Unit Name: Bruella sandy loam, 2 to 5 percent slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Upland area in northern portion of site. Mapped as wetland by SSHCP.                                                                                                                                                         |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                          | Absolute % Cover | Dominant Species? | Indicator Status |  |
|--------------------------------------------------------------------------|------------------|-------------------|------------------|--|
| 1. _____                                                                 | _____            | _____             | _____            |  |
| 2. _____                                                                 | _____            | _____             | _____            |  |
| 3. _____                                                                 | _____            | _____             | _____            |  |
| 4. _____                                                                 | _____            | _____             | _____            |  |
| _____ = Total Cover                                                      |                  |                   |                  |  |
| Sapling/Shrub Stratum (Plot size: _____)                                 |                  |                   |                  |  |
| 1. _____                                                                 | _____            | _____             | _____            |  |
| 2. _____                                                                 | _____            | _____             | _____            |  |
| 3. _____                                                                 | _____            | _____             | _____            |  |
| 4. _____                                                                 | _____            | _____             | _____            |  |
| 5. _____                                                                 | _____            | _____             | _____            |  |
| _____ = Total Cover                                                      |                  |                   |                  |  |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                                |                  |                   |                  |  |
| 1. <u>Hordeum marinum</u>                                                | <u>30</u>        | <u>Y</u>          | <u>FAC</u>       |  |
| 2. <u>Festuca perennis</u>                                               | <u>20</u>        | <u>Y</u>          | <u>FAC</u>       |  |
| 3. <u>Bromus diandrus</u>                                                | <u>5</u>         | <u>N</u>          | <u>NL</u>        |  |
| 4. <u>Avena sp.</u>                                                      | <u>3</u>         | <u>N</u>          | <u>NL</u>        |  |
| 5. _____                                                                 | _____            | _____             | _____            |  |
| 6. _____                                                                 | _____            | _____             | _____            |  |
| 7. _____                                                                 | _____            | _____             | _____            |  |
| 8. _____                                                                 | _____            | _____             | _____            |  |
| _____ = Total Cover                                                      |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: _____)                                    |                  |                   |                  |  |
| 1. _____                                                                 | _____            | _____             | _____            |  |
| 2. _____                                                                 | _____            | _____             | _____            |  |
| _____ = Total Cover                                                      |                  |                   |                  |  |
| % Bare Ground in Herb Stratum <u>42</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |  |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species \_\_\_\_\_ x 1 = \_\_\_\_\_  
 FACW species \_\_\_\_\_ x 2 = \_\_\_\_\_  
 FAC species \_\_\_\_\_ x 3 = \_\_\_\_\_  
 FACU species \_\_\_\_\_ x 4 = \_\_\_\_\_  
 UPL species \_\_\_\_\_ x 5 = \_\_\_\_\_  
 Column Totals: \_\_\_\_\_ (A) \_\_\_\_\_ (B)  
 Prevalence Index = B/A = \_\_\_\_\_

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

Remarks:  
 Grazing and crispy vegetation



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/9/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 108  
 Investigator(s): A, Sennett and A. Crawford Section, Township, Range: Township 7N / Range 7E / Section 10  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.48098309 Long: -121.1890506 Datum: WGS84  
 Soil Map Unit Name: Bruella sandy loam, 2 to 5 percent slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Upland area in northern portion of site. Mapped as wetland by SSHCP.                                                                                                                                                         |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                          | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------------------------------------------|------------------|-------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                 | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                                                                                                                                                                                                                                                                                                             |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                                                      |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                                                                                                                                                                                                                                     |
| Sapling/Shrub Stratum (Plot size: _____)                                 | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                                                 | _____            | _____             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.<br><br><b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____ |
| _____ = Total Cover                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 1. <u>Hordeum marinum</u>                                                | <u>30</u>        | <u>Y</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 2. <u>Festuca perennis</u>                                               | <u>20</u>        | <u>Y</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. <u>Bromus diandrus</u>                                                | <u>5</u>         | <u>N</u>          | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. <u>Avena sp.</u>                                                      | <u>5</u>         | <u>N</u>          | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 6. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 7. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 8. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Woody Vine Stratum (Plot size: _____)                                    | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| % Bare Ground in Herb Stratum <u>40</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

Remarks:  
 Grazing





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/9/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 109  
 Investigator(s): A, Sennett, A. Crawford Section, Township, Range: Township 7N / Range 7E / Section 10  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): Convex Slope (%): 0.5  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47968014 Long: -121.1895369 Datum: WGS84  
 Soil Map Unit Name: Bruella sandy loam, 2 to 5 percent slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated Feature: VP-5                                                                                                                                                                                                     |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------|------------------|----------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                                                                                                                                                                |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| _____ = Total Cover                             |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                                                                                                                                      |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. _____                                        | _____            | _____                            | _____            | <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.<br><br><b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/> |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. <u>Hordeum murinum</u>                       | <u>20</u>        | <u>Y</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. <u>Bromus hordeaceus</u>                     | <u>20</u>        | <u>Y</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. <u>Hordeum marinum</u>                       | <u>5</u>         | <u>N</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. <u>Bromus hordeaceus</u>                     | <u>10</u>        | <u>N</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. <u>Avena sp</u>                              | <u>5</u>         | <u>N</u>                         | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| % Bare Ground in Herb Stratum <u>50</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Remarks:                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

**SOIL**

Sampling Point: 109

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |     |                |   |                   |                  |            |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|-----|----------------|---|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                   | Matrix        |     | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                     | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-3                                                                                                                 | 7.5 YR 3/2    | 100 |                |   |                   |                  | Silty clay |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/9/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 110  
 Investigator(s): A, Sennett and A. Crawford Section, Township, Range: Township 7N / Range 7E / Section 10  
 Landform (hillslope, terrace, etc.): Flatlands Local relief (concave, convex, none): Flat Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47933207 Long: -121.1902446 Datum: WGS84  
 Soil Map Unit Name: Bruella sandy loam, 2 to 5 percent slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
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| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: <u>SWS 02</u>                                                                                                                                                                                            |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                          | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------------------------------------------|------------------|-------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                 | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                                                                 |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                                                      |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                                       |
| Sapling/Shrub Stratum (Plot size: _____)                                 | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Herb Stratum (Plot size: <u>1m x 1m</u> )                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. <u>Elymus caput-medusae</u>                                           | <u>30</u>        | <u>Y</u>          | <u>NL</u>        | <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 2. <u>Bromus hordeaceus</u>                                              | <u>20</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. <u>Holocarpha virgate</u>                                             | <u>7</u>         | <u>N</u>          | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. <u>Hordeum marinum</u>                                                | <u>13</u>        | <u>N</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. <u>Festuca perennis</u>                                               | <u>5</u>         | <u>N</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 6. <u>Bromus hordeaceus</u>                                              | <u>5</u>         | <u>N</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 7. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 8. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Woody Vine Stratum (Plot size: _____)                                    | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                                                 | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b><br>Yes _____ No <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                            |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| % Bare Ground in Herb Stratum <u>20</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Remarks:<br>Grazing                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/9/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 111  
 Investigator(s): A. Sennett and A. Crawford Section, Township, Range: Township 7N / Range 7E / Section 03  
 Landform (hillslope, terrace, etc.): flatlands Local relief (concave, convex, none): flat Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.4818566 Long: -121.1952326 Datum: WGS84  
 Soil Map Unit Name: Reiff fine sandy loam, 0 - 2% slopes, occasionally flooded NWI classification: PEM1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
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| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Cultivated field in northern extent of project site mapped as wetland by SSITCP<br>PEM1C - Freshwater Emergent Wetland                                                                                                       |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------|------------------|----------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)<br><br>Total Number of Dominant Species Across All Strata: _____ (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)                                                                                |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                             |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                        | _____            | _____                            | _____            | <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input checked="" type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)     |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. <u>Eragrostis mexicana</u>                   | 5                | N                                | FACU             |                                                                                                                                                                                                                                                                                                                                     |
| 2. <u>Convolvulus arvensis</u>                  | 3                | N                                | NL               |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| % Bare Ground in Herb Stratum <u>92</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                     |

Remarks:  
 Area is cultivated/ disturbed and lacks vegetation.



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/9/020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 112  
 Investigator(s): A. Sennett and A. Crawford Section, Township, Range: Township 7N / Range 7E / Section 03  
 Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): Convex Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.48183835 Long: -121.189114 Datum: WGS84  
 Soil Map Unit Name: Bruella sandy loam, 2 to 5 percent slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
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| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Area mapped as wetland by SSHCP                                                                                                                                                                                              |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                          | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------------------------------------------------|------------------|-------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                 |                  |                   |                  | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                                                                                                                                                                                                      |
| 2. _____                                                                 |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. _____                                                                 |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                                                 |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <u>0</u> = Total Cover                                                   |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Sapling/Shrub Stratum (Plot size: _____)                                 | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. _____                                                                 |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____                                                                                                                                                                                  |
| 2. _____                                                                 |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. _____                                                                 |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                                                 |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. _____                                                                 |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <u>0</u> = Total Cover                                                   |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Herb Stratum (Plot size: _____)                                          | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. <u>Hordeum marinum</u>                                                | <u>30</u>        | <u>Y</u>          | <u>FAC</u>       | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 2. <u>Festuca perennis</u>                                               | <u>20</u>        | <u>Y</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. <u>Bromus hordeaceus</u>                                              | <u>5</u>         | <u>N</u>          | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. <u>Avena sp.</u>                                                      | <u>5</u>         | <u>N</u>          | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. <u>Erigeron canadensis</u>                                            | <u>5</u>         | <u>N</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 6. _____                                                                 |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 7. _____                                                                 |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 8. _____                                                                 |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <u>70</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Woody Vine Stratum (Plot size: _____)                                    | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. _____                                                                 |                  |                   |                  | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 2. _____                                                                 |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <u>0</u> = Total Cover                                                   |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| % Bare Ground in Herb Stratum <u>30</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

Remarks:  
 Vegetation is dry and matted down from grazing/ cattle activity





## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/9/1010  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 113  
 Investigator(s): A, Sennett, A. Crawford Section, Township, Range: Township 7N / Range 7E / Section 03  
 Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): Convex Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.48179256 Long: -121.1889405 Datum: WGS84  
 Soil Map Unit Name: Bruella sandy loam, 2 to 5 percent slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br><br>Area mapped as wetland by SSHCP                                                                                                                                                                                          |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------|------------------|----------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        |                  |                                  |                  | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                                                                                |
| 2. _____                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <u>0</u> = Total Cover                          |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____                                                            |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 2. _____                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. <u>Hordeum marinum</u>                       | <u>30</u>        | <u>Y</u>                         | <u>FAC</u>       | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 2. <u>Festuca perennis</u>                      | <u>20</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. <u>bromus diandrus</u>                       | <u>5</u>         | <u>N</u>                         | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. <u>Avena sp</u>                              | <u>5</u>         | <u>N</u>                         | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. _____                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 6. _____                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 7. _____                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 8. _____                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <u>60</u> = Total Cover                         |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                        |                  |                                  |                  | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.                                                                                                                                                                                                                                                                                 |
| 2. _____                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <u>0</u> = Total Cover                          |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| % Bare Ground in Herb Stratum <u>40</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____                                                                                                                                                                                                                                                                                                        |

Remarks:  
 Change in vegetation cover/ composition



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/9/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 114  
 Investigator(s): A, Sennett and A. Crawford Section, Township, Range: Township 7N / Range 7E / Section 10  
 Landform (hillslope, terrace, etc.): Flat/ slight topo Local relief (concave, convex, none): flat/none Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.48128767 Long: -121.188633 Datum: WGS84  
 Soil Map Unit Name: Bruella sandy loam, 2 to 5 percent slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Upland area in northern portion of site- mapped by SSHCP as potential wetland                                                                                                                                                |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------|------------------|----------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                                                                                        |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| _____ = Total Cover                             |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. _____                                        | _____            | _____                            | _____            | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. <u>Hordeum marinum</u>                       | <u>25</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 2. <u>Festuca perennis</u>                      | <u>25</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. <u>Bromus diandrus</u>                       | <u>5</u>         | <u>N</u>                         | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. <u>Avena sp.</u>                             | <u>5</u>         | <u>N</u>                         | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| % Bare Ground in Herb Stratum <u>40</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                                                                                |

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Remarks:  
**Grazing**





## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/9/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 115  
 Investigator(s): A, Sennett and A. Crawford Section, Township, Range: Township 7N / Range 7E / Section 10  
 Landform (hillslope, terrace, etc.): Flatlands Local relief (concave, convex, none): None Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.48118032 Long: -121.1890988 Datum: WGS84  
 Soil Map Unit Name: Bruella sandy loam, 2 to 5 percent slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Upland area in northern portion of site. Mapped as wetland by SSHCP.                                                                                                                                                         |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------|------------------|----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                         |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. <u>Hordeum marinum</u>                       | <u>25</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 2. <u>Festuca perennis</u>                      | <u>25</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 3. <u>Bromus diandrus</u>                       | <u>5</u>         | <u>N</u>                         | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                 |
| 4. <u>Avena sp.</u>                             | <u>5</u>         | <u>N</u>                         | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| % Bare Ground in Herb Stratum <u>40</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                 |

Remarks:  
 Grazing



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/9/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 116  
 Investigator(s): A, Sennett, A. Crawford Section, Township, Range: Township 7N / Range 7E / Section 10  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47930837 Long: -121.1896413 Datum: WGS84  
 Soil Map Unit Name: Bruella sandy loam, 2 to 5 percent slopes NWI classification: PUBFx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br><br>Associated Feature: <u>VP-5</u><br>Vernal pool located in the NE portion of the project site; NWI Classification: <u>PUBFx - Freshwater Pond</u>                                                                         |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                 | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------|------------------|-----------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>4</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                                                                                |
| 2. _____                                        | _____            | _____                             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                        | _____            | _____                             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                        | _____            | _____                             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                 |                  |                                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____                                                            |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                        | _____            | _____                             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 2. _____                                        | _____            | _____                             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                        | _____            | _____                             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                 |                  |                                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b> |                  |                                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. <u>Polygogon monspeliensis</u>               | <u>10</u>        | <u>Y</u>                          | <u>FACW</u>      | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 2. <u>Polygonum aviculare</u>                   | <u>10</u>        | <u>Y</u>                          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. <u>Festuca perennis</u>                      | <u>10</u>        | <u>Y</u>                          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. <u>Hordeum marinum</u>                       | <u>10</u>        | <u>Y</u>                          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. <u>Carduus pycnocephalus</u>                 | <u>5</u>         | <u>N</u>                          | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                                                                                |
| 6. <u>Xanthium strumarium</u>                   | <u>5</u>         | <u>N</u>                          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 7. <u>Erigeron canadensis</u>                   | _____            | <u>N</u>                          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 8. _____                                        | _____            | _____                             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 50 = Total Cover                                |                  |                                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                        | _____            | _____                             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 2. _____                                        | _____            | _____                             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                 |                  |                                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| % Bare Ground in Herb Stratum <u>30</u>         |                  | % Cover of Biotic Crust <u>20</u> |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| Remarks:                                        |                  |                                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                |





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/9/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 117  
 Investigator(s): A, Sennett, A.Crawford Section, Township, Range: Township 7N / Range 7E / Section 10  
 Landform (hillslope, terrace, etc.): Flatland Local relief (concave, convex, none): flat Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47950829 Long: -121.1894696 Datum: WGS84  
 Soil Map Unit Name: Bruella sandy loam, 2 to 5 percent slopes NWI classification: PUBFx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Associated Feature: VP-5<br>Edge of vernal pool containing a different assemblage of plant species. NWI classification: PUBFx - Freshwater Pond                                                                              |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------|------------------|----------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                                                                                |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| _____ = Total Cover                             |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>_____ Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____                                                      |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. <u>Festuca perennis</u>                      | <u>70</u>        | <u>Y</u>                         | <u>FAC</u>       | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 2. <u>Hordeum marinum</u>                       | <u>20</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. <u>Polypogon monspeliensis</u>               | <u>15</u>        | <u>N</u>                         | <u>FACW</u>      |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. <u>Rumex crispus</u>                         | <u>5</u>         | <u>N</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                        | _____            | _____                            | _____            | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| % Bare Ground in Herb Stratum <u>0</u>          |                  | % Cover of Biotic Crust <u>0</u> |                  | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____                                                                                                                                                                                                                                                                                                        |
| Remarks:                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |

**SOIL**

Sampling Point: 117

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-3                                                                                                                        | 7.5 YR 3/1    | 95 | 5 YR 5/6       | 5 | C                 | PL               | Silty clay |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
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## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/9/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 119  
 Investigator(s): A, Sennett and A. Crawford Section, Township, Range: Township 7N / Range 7E / Section 10  
 Landform (hillslope, terrace, etc.): Flatlands Local relief (concave, convex, none): Flat Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47939601 Long: -121.1902379 Datum: WGS84  
 Soil Map Unit Name: Bruella sandy loam, 2 to 5 percent slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>SWS that empties into an ag ditch in the northern portion of the project site                                                                                                                                                |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------|------------------|----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                         |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 0 = Total Cover                                 |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. <u>Polygonum monspeliensis</u>               | 15               | Y                                | FACW             |                                                                                                                                                                                                                                                                                                                                 |
| 2. <u>Hordeum marinum</u>                       | 20               | Y                                | FAC              |                                                                                                                                                                                                                                                                                                                                 |
| 3. <u>Festuca perennis</u>                      | 20               | Y                                | FAC              |                                                                                                                                                                                                                                                                                                                                 |
| 4. <u>Malva parviflora</u>                      | 5                | N                                | NL               |                                                                                                                                                                                                                                                                                                                                 |
| 5. <u>Bromus hordeaceus</u>                     | 5                | N                                | FACU             |                                                                                                                                                                                                                                                                                                                                 |
| 6. <u>Erigeron canadensis</u>                   | 5                | N                                | FACU             |                                                                                                                                                                                                                                                                                                                                 |
| 7. <u>Polygonum aviculare</u>                   | 5                | N                                | FAC              |                                                                                                                                                                                                                                                                                                                                 |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 75 = Total Cover                                |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| % Bare Ground in Herb Stratum <u>25</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                 |

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

Remarks:  
 Grazing





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/10/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 121  
 Investigator(s): A. Godinho and A. Crawford Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47156088 Long: -121.1839688 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
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| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br><br>Associated feature: <u>VP06</u><br>Heavily grazed. Adjacent to unpaved access road.                                                                                                                                      |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                                                                                                                                                                                                                                              | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                                                                                                                                                                                                                                     |                  |                   |                  | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                           |
| 2. _____                                                                                                                                                                                                                                                                                     |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                           |
| 3. _____                                                                                                                                                                                                                                                                                     |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                           |
| 4. _____                                                                                                                                                                                                                                                                                     |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                           |
| <u>0</u> = Total Cover                                                                                                                                                                                                                                                                       |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>_____ Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b><br>1. _____<br>2. _____<br>3. _____<br>4. _____<br>5. _____                                                                                                                                                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                           |
| <u>0</u> = Total Cover                                                                                                                                                                                                                                                                       |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                           |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b><br>1. <u>Hordeum marinum</u> <u>45</u> <u>Y</u> <u>FAC</u><br>2. <u>Festuca perennis</u> <u>45</u> <u>Y</u> <u>FAC</u><br>3. <u>Rumex dentatus</u> <u>5</u> <u>N</u> <u>FACW</u><br>4. _____<br>5. _____<br>6. _____<br>7. _____<br>8. _____ |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                           |
| <u>95</u> = Total Cover                                                                                                                                                                                                                                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                           |
| <b>Woody Vine Stratum (Plot size: _____)</b><br>1. _____<br>2. _____                                                                                                                                                                                                                         |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                           |
| <u>0</u> = Total Cover                                                                                                                                                                                                                                                                       |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                           |
| % Bare Ground in Herb Stratum <u>5</u> % Cover of Biotic Crust <u>0</u>                                                                                                                                                                                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                           |

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

Remarks:  
 Vegetation heavily grazed, unable to identify to species



## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/10/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 122  
 Investigator(s): A. Godinho and A. Crawford Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 3  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47153264 Long: TBD-121.1839118 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
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| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: VP-06                                                                                                                                                                                                    |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                              |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| _____ = Total Cover                                                     |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>0</u> x 3 = <u>0</u><br>FACU species <u>75</u> x 4 = <u>300</u><br>UPL species <u>25</u> x 5 = <u>125</u><br>Column Totals: <u>100</u> (A) <u>425</u> (B)<br>Prevalence Index = B/A = <u>4.2</u> |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| _____ = Total Cover                                                     |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                               | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. <u>Bromus hordeaceus</u>                                             | <u>75</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. <u>Holocarpha virgata</u>                                            | <u>25</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| _____ = Total Cover                                                     |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| _____ = Total Cover                                                     |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

Remarks:





## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/10/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 123  
 Investigator(s): A. Godinho and A. Crawford Section, Township, Range: Township 7N / Range 7E / Section 10  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 3  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.4738393 Long: -121.1876265 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: VP 17                                                                                                                                                                                                    |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                                |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| <u>0</u> = Total Cover                                                  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>10</u> x 3 = <u>30</u><br>FACU species <u>25</u> x 4 = <u>100</u><br>UPL species <u>65</u> x 5 = <u>325</u><br>Column Totals: <u>100</u> (A) <u>455</u> (B)<br>Prevalence Index = B/A = <u>4.5</u> |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                      |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                               | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. <u>Elymus caput-medusae</u>                                          | <u>40</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. <u>Bromus hordeaceus</u>                                             | <u>25</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. <u>Holocarpha virgata</u>                                            | <u>25</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. <u>Festuca perennis</u>                                              | <u>10</u>        | <u>N</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| <u>100</u> = Total Cover                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                      |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                      |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                      |
| Remarks:                                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                      |

**SOIL**

Sampling Point: 123

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-2                                                                                                                        | 7.5 YR 3/2    | 98 | 7.5 YR 5/8     | 2 | C                 | PL               | Silty clay |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
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|                                                                                                                            |               |    |                |   |                   |                  |            |         |
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|                                                                                                                            |               |    |                |   |                   |                  |            |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/10/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 124  
 Investigator(s): A. Godinho and A. Crawford Section, Township, Range: Township 7N / Range 7E / Section 10  
 Landform (hillslope, terrace, etc.): basin Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.4737167 Long: -121.1889743 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 0 - 2% slopes NWI classification: PEM1Ah

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Associated Feature: P03<br>Actively being graded during field visit<br>PEM1Ah - Freshwater Emergent Wetland                                                                                                                  |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                                           | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------------------------------------------------|------------------|-------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                  | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)<br><br>Total Number of Dominant Species Across All Strata: _____ (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)                                                                                                                                                                  |
| 2. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                                                       |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____                                                                                   |
| Sapling/Shrub Stratum (Plot size: _____)                                  | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                                                       |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Herb Stratum (Plot size: _____)                                           | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                                                  | _____            | _____             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 2. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 6. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 7. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 8. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                                                       |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Woody Vine Stratum (Plot size: _____)                                     | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                                                  | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                               |
| 2. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                                                       |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| % Bare Ground in Herb Stratum <u>100</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |

Remarks:  
**No vegetation.**

**SOIL**

Sampling Point: 124

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix        |     | Redox Features |   |                   |                  | Texture | Remarks |
|----------------|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
|                | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |         |
| 0-1            | 7.5 YR 4/4    | 100 |                |   |                   |                  | SCL     |         |
|                |               |     |                |   |                   |                  |         |         |
|                |               |     |                |   |                   |                  |         |         |
|                |               |     |                |   |                   |                  |         |         |
|                |               |     |                |   |                   |                  |         |         |
|                |               |     |                |   |                   |                  |         |         |
|                |               |     |                |   |                   |                  |         |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b></p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5) <b>(LRR C)</b></p> <p><input type="checkbox"/> 1 cm Muck (A9) <b>(LRR D)</b></p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> | <p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <p><input type="checkbox"/> 1 cm Muck (A9) <b>(LRR C)</b></p> <p><input type="checkbox"/> 2 cm Muck (A10) <b>(LRR B)</b></p> <p><input type="checkbox"/> Reduced Vertic (F18)</p> <p><input type="checkbox"/> Red Parent Material (TF2)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|                                                                                                                    |                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| <p><b>Restrictive Layer (if present):</b></p> <p>Type: <u>hard pan/ cobbel</u></p> <p>Depth (inches): <u>1</u></p> | <p><b>Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> |
|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|

Remarks:

Any evidence of hydric soils has been graded away. Basin has been graded several feet down.

**HYDROLOGY**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <p><b>Wetland Hydrology Indicators:</b></p> <p>Primary Indicators (minimum of one required; check all that apply)</p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1) <b>(Nonriverine)</b></p> <p><input type="checkbox"/> Sediment Deposits (B2) <b>(Nonriverine)</b></p> <p><input type="checkbox"/> Drift Deposits (B3) <b>(Nonriverine)</b></p> <p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9)</p> |  | <p>Secondary Indicators (2 or more required)</p> <p><input type="checkbox"/> Salt Crust (B11)</p> <p><input type="checkbox"/> Biotic Crust (B12)</p> <p><input type="checkbox"/> Aquatic Invertebrates (B13)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p> |  | <p><input type="checkbox"/> Water Marks (B1) <b>(Riverine)</b></p> <p><input type="checkbox"/> Sediment Deposits (B2) <b>(Riverine)</b></p> <p><input type="checkbox"/> Drift Deposits (B3) <b>(Riverine)</b></p> <p><input type="checkbox"/> Drainage Patterns (B10)</p> <p><input type="checkbox"/> Dry-Season Water Table (C2)</p> <p><input type="checkbox"/> Crayfish Burrows (C8)</p> <p><input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Shallow Aquitard (D3)</p> <p><input type="checkbox"/> FAC-Neutral Test (D5)</p> |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_

Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_

Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): \_\_\_\_\_

**Wetland Hydrology Present?** Yes  No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/10/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 125  
 Investigator(s): A. Godinho and A. Crawford Section, Township, Range: Township 7N / Range 7E / Section 10  
 Landform (hillslope, terrace, etc.): Basin Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.46948349 Long: -121.1929413 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated Feature: P-03                                                                                                                                                                                                     |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------|------------------|----------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)<br><br>Total Number of Dominant Species Across All Strata: _____ (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)                                                                                |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                             |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. <u>Holocarpha virgata</u>                    | <u>10</u>        | <u>Y</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| % Bare Ground in Herb Stratum <u>90</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                     |

Remarks:  
 Heavily grazed



## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/10/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 126  
 Investigator(s): A. Godinho and A. Crawford Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47171775 Long: -121.1862207 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br><br>Associated feature: <u>SW36</u><br>Saddle between 2 hills                                                                                                                                                                |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                                          | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------------------------------------------------|------------------|-------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                 | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>.5</u> (A/B)                                                                                                                       |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| _____ = Total Cover                                                      |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>15</u> x 1 = <u>15</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>60</u> x 3 = <u>180</u><br>FACU species <u>0</u> x 4 = <u>0</u><br>UPL species <u>0</u> x 5 = <u>0</u><br>Column Totals: <u>75</u> (A) <u>195</u> (B)<br><br>Prevalence Index = B/A = <u>2.6</u> |
| Sapling/Shrub Stratum (Plot size: _____)                                 | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| _____ = Total Cover                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                      |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. <u>Festuca perennis</u>                                               | <u>60</u>        | <u>Y</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. <u>Eryngium castrense</u>                                             | <u>15</u>        | <u>Y</u>          | <u>OBL</u>       |                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 6. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 7. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 8. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| _____ = Total Cover                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                      |
| Woody Vine Stratum (Plot size: _____)                                    | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| _____ = Total Cover                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                      |
| % Bare Ground in Herb Stratum <u>25</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                      |

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

Remarks:





## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/10/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 127  
 Investigator(s): A. Godinho and A. Crawford Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 2  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47169733 Long: -121.1862854 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: SW-36                                                                                                                                                                                                    |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A/B)                                                                                                                              |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>0</u> = Total Cover                                                  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>0</u> x 3 = <u>0</u><br>FACU species <u>50</u> x 4 = <u>200</u><br>UPL species <u>50</u> x 5 = <u>250</u><br>Column Totals: <u>100</u> (A) <u>450</u> (B)<br>Prevalence Index = B/A = <u>4.5</u> |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                               | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. <u>Elymus caput-medusae</u>                                          | <u>25</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. <u>Bromus hordeaceus</u>                                             | <u>50</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. <u>Holocarpha virgata</u>                                            | <u>25</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>100</u> = Total Cover                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| Remarks:                                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/10/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 128  
 Investigator(s): A. Godinho and A. Crawford Section, Township, Range: Township 7N / Range 7E / Section 10  
 Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): Concave Slope (%): 3  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47221605 Long: -121.1885016 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated Feature: SW37                                                                                                                                                                                                     |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                                      |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                            |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                            |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                            |
| <u>0</u> = Total Cover                                                  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>0</u> x 3 = <u>0</u><br>FACU species <u>67.5</u> x 4 = <u>270</u><br>UPL species <u>42.5</u> x 5 = <u>212.5</u><br>Column Totals: <u>100</u> (A) <u>482.5</u> (B)<br>Prevalence Index = B/A = <u>4.8</u> |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                            |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                            |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                            |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                            |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                            |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                            |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                               | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                            |
| 1. <u>Bromus hordeaceus</u>                                             | <u>17.5</u>      | <u>N</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                            |
| 2. <u>Elymus caput-medusae</u>                                          | <u>17.5</u>      | <u>N</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                            |
| 3. <u>Festuca myuros</u>                                                | <u>50</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                            |
| 4. <u>Holocarpha virgata</u>                                            | <u>25</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                            |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                            |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                            |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                            |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                            |
| <u>100</u> = Total Cover                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                            |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                            |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                            |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                            |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                            |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                            |
| Remarks:                                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                            |

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.





## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/10/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 129  
 Investigator(s): A. Godinho and A. Crawford Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): basin Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47321644 Long: -121.1868466 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Associated feature: SW 35                                                                                                                                                                                                    |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------|------------------|----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>4</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                         |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. <u>Festuca perennis</u>                      | <u>20</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 2. <u>Eryngium castrense</u>                    | <u>10</u>        | <u>Y</u>                         | <u>OBL</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 3. <u>Phyla nodiflora</u>                       | <u>10</u>        | <u>Y</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                 |
| 4. <u>Polygonum aviculare</u>                   | <u>10</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| % Bare Ground in Herb Stratum <u>50</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                 |
| Remarks:                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

**SOIL**

Sampling Point: 129

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-4                                                                                                                        | 10 YR 3/1     | 95 | 7.5 YR 5/8     | 5 | C                 | PL               | Silty clay |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
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|                                                                                                                            |               |    |                |   |                   |                  |            |         |

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/10/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 130  
 Investigator(s): A. Godinho and A. Crawford Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47326018 Long: -121.1868134 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: SW 35                                                                                                                                                                                                    |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------|------------------|----------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)                                                                                                                             |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| _____ = Total Cover                             |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>25</u> x 3 = <u>75</u><br>FACU species <u>50</u> x 4 = <u>200</u><br>UPL species <u>25</u> x 5 = <u>125</u><br>Column Totals: <u>100</u> (A) <u>400</u> (B)<br>Prevalence Index = B/A = <u>4</u> |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. <u>Bromus hordeaceus</u>                     | <u>50</u>        | <u>Y</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. <u>Holocarpha virgata</u>                    | <u>25</u>        | <u>Y</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. <u>Festuca perennis</u>                      | <u>25</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| % Bare Ground in Herb Stratum <u>0</u>          |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| Remarks:                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                    |

|                                                                                  |
|----------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> |
|----------------------------------------------------------------------------------|





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/10/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 132  
 Investigator(s): A. Godinho and A. Crawford Section, Township, Range: Township 7N / Range 7E / Section 10  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 3  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.4738393 Long: -121.1876265 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Associated feature: VP17                                                                                                                                                                                                     |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------|------------------|----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                         |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. <u>Eleocharis macrostachya</u>               | <u>30</u>        | <u>Y</u>                         | <u>OBL</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 2. <u>Hordeum marinum</u>                       | <u>5</u>         | <u>N</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 3. <u>Holocarpha virgata</u>                    | <u>5</u>         | <u>N</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 4. <u>Eryngium castrense</u>                    | <u>5</u>         | <u>N</u>                         | <u>OBL</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 5. <u>Polygonum aviculare</u>                   | <u>5</u>         | <u>N</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| % Bare Ground in Herb Stratum <u>50</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                 |
| Remarks:                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |

Hydrophytic Vegetation Indicators:  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/10/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 133  
 Investigator(s): A. Godinho and A. Crawford Section, Township, Range: Township 7N / Range 7E / Section 10  
 Landform (hillslope, terrace, etc.): Basin Local relief (concave, convex, none): Concave Slope (%): 5  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47383308 Long: -121.1891878 Datum: WGS84  
 Soil Map Unit Name: Galt clay, 0 - 2% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated Feature: P-03                                                                                                                                                                                                     |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                           | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------------------------------------------------|------------------|-------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                  | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>0</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                                                                 |
| 2. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <u>0</u> = Total Cover                                                    |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                                       |
| Sapling/Shrub Stratum (Plot size: _____)                                  | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <u>0</u> = Total Cover                                                    |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                                 | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                                                  | _____            | _____             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 2. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 6. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 7. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 8. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                                                       |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Woody Vine Stratum (Plot size: _____)                                     | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                                                  | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b><br>Yes _____ No _____                                                                                                                                                                                                                                                                                                                                                          |
| 2. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <u>0</u> = Total Cover                                                    |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| % Bare Ground in Herb Stratum <u>100</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |

Remarks:  
 Area is disturbed, used to stage agricultural equipment

**SOIL**

Sampling Point: 133

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix        |     | Redox Features |   |                   |                  | Texture    | Remarks |
|----------------|---------------|-----|----------------|---|-------------------|------------------|------------|---------|
|                | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-2            | 7.5 YR 3/2    | 100 |                |   |                   |                  | Silty clay |         |
|                |               |     |                |   |                   |                  |            |         |
|                |               |     |                |   |                   |                  |            |         |
|                |               |     |                |   |                   |                  |            |         |
|                |               |     |                |   |                   |                  |            |         |
|                |               |     |                |   |                   |                  |            |         |
|                |               |     |                |   |                   |                  |            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: hard pan  
 Depth (inches): 2

Hydric Soil Present? Yes  No

Remarks:

Slope is a soil stockpile, by product of grading basin.

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (Nonriverine)
- Sediment Deposits (B2) (Nonriverine)
- Drift Deposits (B3) (Nonriverine)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): \_\_\_\_\_

Wetland Hydrology Present? Yes  No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/10/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 134  
 Investigator(s): A. Godinho and A. Crawford Section, Township, Range: Township 7N / Range 7E / Section 10  
 Landform (hillslope, terrace, etc.): Basin Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.46963031 Long: -121.1925745 Datum: WGS84  
 Soil Map Unit Name: Sailboat silt loam, drained, 0 - 2% slopes, occasionally flooded NWI classification: PEM1Ch

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation , Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br><br>Associated Feature: P-03<br>PEM1Ch - Freshwater Emergent Wetland                                                                                                                                                         |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------------------------|------------------|----------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                            |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                          |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                          |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                          |
| <u>0</u> = Total Cover                          |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species <u>75</u> x 5 = <u>375</u><br>Column Totals: <u>75</u> (A) <u>375</u> (B)<br><br>Prevalence Index = B/A = <u>5</u> |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                          |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                          |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                          |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                          |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                          |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                          |
| <u>0</u> = Total Cover                          |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                          |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                          |
| 1. <u>Dittrichia graveolens</u>                 | <u>75</u>        | <u>Y</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                          |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                          |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                          |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                          |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                          |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                          |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                          |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                          |
| <u>75</u> = Total Cover                         |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                          |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                          |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                          |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                          |
| <u>0</u> = Total Cover                          |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                          |
| % Bare Ground in Herb Stratum <u>25</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                                          |

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

Remarks:  
 Late season upland vegetation has moved into the margin of the feature. Inundation visible on areal imagery.

**SOIL**

Sampling Point: 134

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-2                                                                                                                        | 10 YR 4/2     | 98 | 7.5 YR 5/8     | 2 | C                 | M                | Silty clay |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/10/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 135  
 Investigator(s): A. Godinho and A. Crawford Section, Township, Range: Township 7N / Range 7E / Section 10  
 Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47212802 Long: -121.1888395 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Associated Feature: SW-37, at base of drainages upland of basin.                                                                                                                                                             |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------|------------------|----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                         |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 0 = Total Cover                                 |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. <u>Plagiobothrys bracteatus</u>              | <u>40</u>        | <u>Y</u>                         | <u>FACW</u>      |                                                                                                                                                                                                                                                                                                                                 |
| 2. <u>Epilobium brachycarpum</u>                | <u>5</u>         | <u>N</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 3. <u>Hordeum marinum</u>                       | <u>15</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 4. <u>Eryngium castrense</u>                    | <u>2.5</u>       | <u>N</u>                         | <u>OBL</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 5. <u>Polypogon monspeliensis</u>               | <u>5</u>         | <u>N</u>                         | <u>FACW</u>      |                                                                                                                                                                                                                                                                                                                                 |
| 6. <u>Festuca perennis</u>                      | <u>2.5</u>       | <u>N</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 7. <u>Phyla nodiflora</u>                       | <u>2.5</u>       | <u>N</u>                         | <u>FACW</u>      |                                                                                                                                                                                                                                                                                                                                 |
| 8. <u>Lactuca serriola</u>                      | <u>2.5</u>       | <u>N</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                 |
| 75 = Total Cover                                |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| % Bare Ground in Herb Stratum <u>25</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                 |
| Remarks:                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |

Hydrophytic Vegetation Present? Yes  No \_\_\_\_\_

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**SOIL**

Sampling Point: 135

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |    |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|----|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |    |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-3                                                                                                                        | 10 YR 3/2     | 75 | 5 YR 3/8       | 25 | C                 | M                | Silty clay |         |
|                                                                                                                            |               |    |                |    |                   |                  |            |         |
|                                                                                                                            |               |    |                |    |                   |                  |            |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/11/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 136  
 Investigator(s): L. Burris and A. Sennett Section, Township, Range: Township 7N / Range 7E / Section 02  
 Landform (hillslope, terrace, etc.): Hilltop Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.4818976 Long: -121.1855596 Datum: WGS84  
 Soil Map Unit Name: Bruella sandy loam, 2 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Associated feature:P-01<br>Pond at base of drainage - appears to receive water from livestock trough at top of drainage                                                                                                      |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                           | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------------------------------------------|------------------|-------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                  | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)<br><br>Total Number of Dominant Species Across All Strata: _____ (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)                                                                                |
| 2. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 0 = Total Cover                                                           |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: _____)                                  | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 0 = Total Cover                                                           |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                     |
| Herb Stratum (Plot size: _____)                                           | Absolute % Cover | Dominant Species? | Indicator Status | <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input checked="" type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)     |
| 1. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 6. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 7. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 8. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 0 = Total Cover                                                           |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                     |
| Woody Vine Stratum (Plot size: _____)                                     | Absolute % Cover | Dominant Species? | Indicator Status | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.                                                                                                                                                                                                                      |
| 1. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                                                  | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 0 = Total Cover                                                           |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                     |
| % Bare Ground in Herb Stratum <u>100</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____                                                                                                                                                                                                                                             |

Remarks:  
 Bare ground due to severe cattle grazing and trampling

**SOIL**

Sampling Point: 136

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |   |                   |                  |            |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth (inches)                                                                                                      | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                     | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-6                                                                                                                 | 7.5 YR 5/1    | 97 | 5 YR 4/6       | 3 | C                 | M                | Silty clay |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
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|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Indicators for Problematic Hydric Soils <sup>3</sup> :                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5) (LRR C)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR D)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Sandy Mucky Mineral (S1)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Loamy Mucky Mineral (F1)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Vernal Pools (F9) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR B)<br><input type="checkbox"/> Reduced Vertic (F18)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Other (Explain in Remarks)                                                                                                                                                                                                 |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|                                                                                         |                                                                                                 |
|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Restrictive Layer (if present):</b><br>Type: <u>Clay</u><br>Depth (inches): <u>6</u> | <b>Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|

Remarks:

**HYDROLOGY**

| Wetland Hydrology Indicators:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Indicators (minimum of one required; check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Secondary Indicators (2 or more required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) (Nonriverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)<br><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)<br><input checked="" type="checkbox"/> Surface Soil Cracks (B6)<br><input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Other (Explain in Remarks) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <input type="checkbox"/> Water Marks (B1) (Riverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Riverine)<br><input type="checkbox"/> Drift Deposits (B3) (Riverine)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> FAC-Neutral Test (D5)        |

|                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                       |
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| <b>Field Observations:</b><br>Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ | <b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/11/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 140  
 Investigator(s): L. Burris and A. Sennet Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): flatlands Local relief (concave, convex, none): convex Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47942209 Long: -121.1844449 Datum: WGS84  
 Soil Map Unit Name: San Joaquin silt loam, 3 - 8% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
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| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: SW-38                                                                                                                                                                                                    |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                                      | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------------------------|------------------|-------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                             | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                                                                 |
| 2. _____                                                             | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                                             | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                                             | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                                             | _____            | _____             | _____            | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                                       |
| 2. _____                                                             | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                                             | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                                             | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. _____                                                             | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b>                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. <u>Bromus hordeaceus</u>                                          | 50               | Y                 | FACU             | <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 2. <u>Elymus caput-medusae</u>                                       | 5                | N                 | NL               |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. <u>Festuca perennis</u>                                           | 5                | N                 | FAC              |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. <u>Holocarpha virgata</u>                                         | 20               | Y                 | NL               |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. _____                                                             | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 6. _____                                                             | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 7. _____                                                             | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 8. _____                                                             | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 80 = Total Cover                                                     |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Woody Vine Stratum (Plot size: _____)</b>                         |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                                             | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b><br>Yes _____ No <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                            |
| 2. _____                                                             | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| % Bare Ground in Herb Stratum _____ % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |

Remarks:  
 thatch cover is thick





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/12/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 141  
 Investigator(s): A. Godinho and A. Sennett Section, Township, Range: Township 7N / Range 7E / Section 02  
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): \_\_\_\_\_  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.48295997 Long: -121.1866172 Datum: WGS84  
 Soil Map Unit Name: Bruella sandy loam, 2 to 5 percent slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Associated feature: SW-42<br>Microdepression previously mapped by SSHCP                                                                                                                                                      |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------|------------------|----------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                     |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 0 = Total Cover                                 |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. <u>Hordeum marinum</u>                       | <u>30</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                     |
| 2. <u>Rumex dentatus</u>                        | <u>15</u>        | <u>N</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                     |
| 3. <u>Briza minor</u>                           | <u>5</u>         | <u>N</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                     |
| 4. <u>Festuca myuros</u>                        | <u>5</u>         | <u>N</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                     |
| 5. <u>Festuca perennis</u>                      | <u>5</u>         | <u>N</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                     |
| 6. <u>Holocarpha virgata</u>                    | <u>15</u>        | <u>N</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                     |
| 7. <u>Bromus hordeaceus</u>                     | <u>5</u>         | <u>N</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                     |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 80 = Total Cover                                |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| % Bare Ground in Herb Stratum <u>20</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                     |
| Remarks:                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |   |                   |                  |            |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth (inches)                                                                                                      | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                     | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-2                                                                                                                 | 7.5 YR 3/2    | 95 | 7.5 YR 4/6     | 5 | C                 | PL/M             | Silty clay |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Indicators for Problematic Hydric Soils <sup>3</sup> :                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5) (LRR C)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR D)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Sandy Mucky Mineral (S1)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Loamy Mucky Mineral (F1)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input checked="" type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Vernal Pools (F9) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR B)<br><input type="checkbox"/> Reduced Vertic (F18)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Other (Explain in Remarks)                                                                                                                                                                                                            |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|                                                                                          |                                                                              |
|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| <b>Restrictive Layer (if present):</b><br>Type: <u>hard pan</u><br>Depth (inches): _____ | <b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No _____ |
|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|

Remarks:

**HYDROLOGY**

| Wetland Hydrology Indicators:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Indicators (minimum of one required; check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Secondary Indicators (2 or more required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) (Nonriverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)<br><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)<br><input type="checkbox"/> Surface Soil Cracks (B6)<br><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Other (Explain in Remarks) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <input type="checkbox"/> Water Marks (B1) (Riverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Riverine)<br><input type="checkbox"/> Drift Deposits (B3) (Riverine)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> FAC-Neutral Test (D5)                   |

|                                                                                                                                                                                                                                                                                                                                                               |                                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| <b>Field Observations:</b><br>Surface Water Present?    Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present?    Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe)    Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ | <b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____ |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/12/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 142  
 Investigator(s): A. Godinho and A. Sennett Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.46793467 Long: -121.179434 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: SW-42                                                                                                                                                                                                    |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                               |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| <u>0</u> = Total Cover                                                  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>0</u> x 3 = <u>0</u><br>FACU species <u>25</u> x 4 = <u>100</u><br>UPL species <u>75</u> x 5 = <u>375</u><br>Column Totals: <u>100</u> (A) <u>475</u> (B)<br>Prevalence Index = B/A = <u>4.75</u> |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                               | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                     |
| 1. <u>Elymus caput-medusae</u>                                          | <u>50</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                     |
| 2. <u>Bromus hordeaceus</u>                                             | <u>25</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. <u>Holocarpha virgata</u>                                            | <u>25</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| <u>100</u> = Total Cover                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| Remarks:                                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/12/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 144  
 Investigator(s): A. Godinho and A. Sennett Section, Township, Range: Township 7N / Range 7E / Section 10  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.46991952 Long: -121.1900576 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>At base of slopes, east of basin<br>Associated feature: n/a                                                                                                                                                                  |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------|------------------|----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>4</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>.5</u> (A/B)                                                                                                                                    |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                   |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                   |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                   |
| _____ = Total Cover                             |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>47.5</u> x 3 = <u>142.5</u><br>FACU species <u>25</u> x 4 = <u>100</u><br>UPL species <u>27.5</u> x 5 = <u>137.5</u><br>Column Totals: <u>100</u> (A) <u>380</u> (B)<br><br>Prevalence Index = B/A = <u>3.8</u> |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                   |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                   |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                   |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                   |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                   |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                   |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                   |
| 1. <u>Elymus caput-medusae</u>                  | <u>25</u>        | <u>Y</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                   |
| 2. <u>Bromus hordeaceus</u>                     | <u>25</u>        | <u>Y</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                   |
| 3. <u>Festuca perennis</u>                      | <u>25</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                   |
| 4. <u>Hordeum marinum</u>                       | <u>22.5</u>      | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                   |
| 5. <u>Holocarpha virgata</u>                    | <u>2.5</u>       | <u>N</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                   |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                   |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                   |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                   |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                   |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                   |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                   |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                   |
| % Bare Ground in Herb Stratum <u>0</u>          |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                                                                                   |
| Remarks:                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                   |

**SOIL**

Sampling Point: 144

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |         |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|---------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |         |
| 0-3                                                                                                                        | 7.5 YR 3/2    | 97 | 5 YR 5/8       | 3 | C                 | PL               | C       |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/12/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 145  
 Investigator(s): A. Godinho and A. Sennett Section, Township, Range: Township 7N / Range 7E / Section 15  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 3  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.46704311 Long: -121.1914261 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: FEW-01                                                                                                                                                                                                   |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>30</u> (A/B)                                                                                                                              |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| <u>0</u> = Total Cover                                                  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species <u>50</u> x 3 = <u>150</u><br>FACU species <u>25</u> x 4 = <u>100</u><br>UPL species <u>25</u> x 5 = <u>125</u><br>Column Totals: <u>100</u> (A) <u>375</u> (B)<br>Prevalence Index = B/A = <u>3.75</u>          |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| Herb Stratum (Plot size: <u>1m x 1m</u> )                               | Absolute % Cover | Dominant Species? | Indicator Status | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 1. <u>Festuca perennis</u>                                              | <u>50</u>        | <u>Y</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                     |
| 2. <u>Bromus hordeaceus</u>                                             | <u>25</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. <u>Holocarpha virgata</u>                                            | <u>25</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| <u>100</u> = Total Cover                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.                                                                                                                                                                                                                                                                      |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                                                | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                             |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| Remarks:                                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |

**SOIL**

Sampling Point: 145

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |    |                   |                  |         |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|----|-------------------|------------------|---------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |    |                   |                  | Texture | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |         |         |
| 0-4                                                                                                                        | 10 YR 4/2     | 90 | 7.5 YR 5/8     | 10 | C                 | PL               | Si      |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/12/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 146  
 Investigator(s): A. Godinho and A. Sennett Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): None Slope (%): 5  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.46777723 Long: -121.1848658 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Point taken within feature previously mapped by SSHCP and/or with aerial signature showing saturation                                                                                                                        |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                  | Absolute % Cover                 | Dominant Species? | Indicator Status |  |
|--------------------------------------------------|----------------------------------|-------------------|------------------|--|
| 1. _____                                         | _____                            | _____             | _____            |  |
| 2. _____                                         | _____                            | _____             | _____            |  |
| 3. _____                                         | _____                            | _____             | _____            |  |
| 4. _____                                         | _____                            | _____             | _____            |  |
| _____ = Total Cover                              |                                  |                   |                  |  |
| <b>Sapling/Shrub Stratum</b> (Plot size: _____)  |                                  |                   |                  |  |
| 1. _____                                         | _____                            | _____             | _____            |  |
| 2. _____                                         | _____                            | _____             | _____            |  |
| 3. _____                                         | _____                            | _____             | _____            |  |
| 4. _____                                         | _____                            | _____             | _____            |  |
| 5. _____                                         | _____                            | _____             | _____            |  |
| _____ = Total Cover                              |                                  |                   |                  |  |
| <b>Herb Stratum</b> (Plot size: <u>5m x 5m</u> ) |                                  |                   |                  |  |
| 1. <u>Holocarpha virgata</u>                     | <u>20</u>                        | <u>Y</u>          | <u>UPL</u>       |  |
| 2. <u>Bromus hordeaceus</u>                      | <u>75</u>                        | <u>Y</u>          | <u>FACU</u>      |  |
| 3. <u>Lactuca serriola</u>                       | <u>5</u>                         | <u>N</u>          | <u>UPL</u>       |  |
| 4. _____                                         | _____                            | _____             | _____            |  |
| 5. _____                                         | _____                            | _____             | _____            |  |
| 6. _____                                         | _____                            | _____             | _____            |  |
| 7. _____                                         | _____                            | _____             | _____            |  |
| 8. _____                                         | _____                            | _____             | _____            |  |
| _____ = Total Cover                              |                                  |                   |                  |  |
| <b>Woody Vine Stratum</b> (Plot size: _____)     |                                  |                   |                  |  |
| 1. _____                                         | _____                            | _____             | _____            |  |
| 2. _____                                         | _____                            | _____             | _____            |  |
| _____ = Total Cover                              |                                  |                   |                  |  |
| % Bare Ground in Herb Stratum <u>0</u>           | % Cover of Biotic Crust <u>0</u> |                   |                  |  |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 0 x 3 = 0  
 FACU species 75 x 4 = 300  
 UPL species 25 x 5 = 125  
 Column Totals: 100 (A) 425 (B)  
 Prevalence Index = B/A = 4.25

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

Remarks:



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/12/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 147  
 Investigator(s): A. Godinho and A. Sennett Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Basin Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.46762205 Long: -121.1813716 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Within area previously mapped by SSHCP, between solar arrays<br>Associated feature: n/a                                                                                                                                      |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------|------------------|----------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>5</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>20</u> (A/B)                                                                                                                         |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                |
| _____ = Total Cover                             |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>10</u> x 3 = <u>30</u><br>FACU species <u>20</u> x 4 = <u>80</u><br>UPL species <u>20</u> x 5 = <u>100</u><br>Column Totals: _____ (A) <u>210</u> (B)<br>Prevalence Index = B/A = <u>2.1</u> |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                |
| 1. <u>Bromus hordeaceus</u>                     | <u>10</u>        | <u>Y</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                |
| 2. <u>Festuca perennis</u>                      | <u>10</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                |
| 3. <u>Elymus caput-medusae</u>                  | <u>10</u>        | <u>Y</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                |
| 4. <u>Phalaris aquatica</u>                     | <u>10</u>        | <u>Y</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                |
| 5. <u>Lactuca serriola</u>                      | <u>10</u>        | <u>Y</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                |
| % Bare Ground in Herb Stratum <u>50</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                                                                |

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

Remarks:  
 50% thatch in Herb Stratum





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/12/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 148  
 Investigator(s): A. Godinho and A. Sennett Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.46711054 Long: -121.1801122 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Within feature previously mapped by SSHCP<br>Associated feature: n/a                                                                                                                                                         |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                                |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| <u>0</u> = Total Cover                                                  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>10</u> x 3 = <u>30</u><br>FACU species <u>35</u> x 4 = <u>150</u><br>UPL species <u>55</u> x 5 = <u>275</u><br>Column Totals: <u>100</u> (A) <u>455</u> (B)<br>Prevalence Index = B/A = <u>4.5</u> |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                      |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                               | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. <u>Elymus caput-medusae</u>                                          | <u>35</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. <u>Bromus hordeaceus</u>                                             | <u>35</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. <u>Festuca perennis</u>                                              | <u>10</u>        | <u>N</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. <u>Avena fatua</u>                                                   | <u>10</u>        | <u>N</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. <u>Holocarpha virgata</u>                                            | <u>10</u>        | <u>N</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                      |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| <u>100</u> = Total Cover                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                      |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                      |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                      |
| Remarks:                                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                      |



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/12/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 149  
 Investigator(s): A. Godinho and A. Sennett Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.46730612 Long: -121.179723 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Microdepression, prev mapped by SSHCP<br>Associated feature: n/a                                                                                                                                                             |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                                                                                                                                                                                                                                            |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <u>0</u> = Total Cover                                                  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>5</u> x 3 = <u>15</u><br>FACU species <u>80</u> x 4 = <u>240</u><br>UPL species <u>15</u> x 5 = <u>75</u><br>Column Totals: <u>100</u> (A) <u>330</u> (B)<br><br>Prevalence Index = B/A = <u>3.3</u>                                                                                                                                                                                                                   |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Herb Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.<br><br><b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/> |
| 1. <u>Festuca myuros</u>                                                | <u>40</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 2. <u>Bromus hordeaceus</u>                                             | <u>40</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 3. <u>Hordeum marinum</u>                                               | <u>5</u>         | <u>N</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 4. <u>Holocarpha virgata</u>                                            | <u>10</u>        | <u>N</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 5. <u>Lupinus sp?</u>                                                   | <u>5</u>         | <u>N</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <u>100</u> = Total Cover                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

Remarks:





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/12/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 150  
 Investigator(s): A. Godinho and A. Sennett Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.46752183 Long: -121.1796916 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Larger microdepression previously mapped by SSHCP<br>Associated feature: n/a                                                                                                                                                 |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>.5</u> (A/B)                                                                                                                             |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>0</u> = Total Cover                                                  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>50</u> x 3 = <u>150</u><br>FACU species <u>50</u> x 4 = <u>200</u><br>UPL species <u>0</u> x 5 = <u>0</u><br>Column Totals: <u>100</u> (A) <u>350</u> (B)<br>Prevalence Index = B/A = <u>3.5</u> |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                               | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. <u>Festuca perennis</u>                                              | <u>50</u>        | <u>Y</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. <u>Bromus hordeaceus</u>                                             | <u>50</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>100</u> = Total Cover                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

Remarks:

**SOIL**

Sampling Point: 150

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |     |                |   |                   |                  |            |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|-----|----------------|---|-------------------|------------------|------------|---------|
| Depth (inches)                                                                                                      | Matrix        |     | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                     | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-2                                                                                                                 | 10 YR 3/2     | 100 |                |   |                   |                  | Silty clay |         |
|                                                                                                                     |               |     |                |   |                   |                  |            |         |
|                                                                                                                     |               |     |                |   |                   |                  |            |         |
|                                                                                                                     |               |     |                |   |                   |                  |            |         |
|                                                                                                                     |               |     |                |   |                   |                  |            |         |
|                                                                                                                     |               |     |                |   |                   |                  |            |         |
|                                                                                                                     |               |     |                |   |                   |                  |            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Indicators for Problematic Hydric Soils <sup>3</sup> :                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5) (LRR C)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR D)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Sandy Mucky Mineral (S1)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Loamy Mucky Mineral (F1)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Vernal Pools (F9) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR B)<br><input type="checkbox"/> Reduced Vertic (F18)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Other (Explain in Remarks)                                                                                                                                                                                                 |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|                                                                                             |                                                                                      |
|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <b>Restrictive Layer (if present):</b><br>Type: <u>hard pan</u><br>Depth (inches): <u>2</u> | <b>Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input type="checkbox"/> |
|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|

Remarks:

**HYDROLOGY**

| Wetland Hydrology Indicators:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Indicators (minimum of one required; check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Secondary Indicators (2 or more required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) (Nonriverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)<br><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)<br><input type="checkbox"/> Surface Soil Cracks (B6)<br><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Other (Explain in Remarks) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <input type="checkbox"/> Water Marks (B1) (Riverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Riverine)<br><input type="checkbox"/> Drift Deposits (B3) (Riverine)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> FAC-Neutral Test (D5)        |

|                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Field Observations:</b><br>Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ | <b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/12/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 153  
 Investigator(s): A. Godinho and A. Sennett Section, Township, Range: Township 7N / Range 7E / Section 10  
 Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): None Slope (%): 5  
 Subregion (LRR): C Lat: 38.47107383 Long: -121.1877879 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>No break in slope or change in vegetation. Likely sheet flows through this area during run-off events.                                                                                                                                                                                |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |  |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|--|
| 1. _____                                                                | _____            | _____             | _____            |  |
| 2. _____                                                                | _____            | _____             | _____            |  |
| 3. _____                                                                | _____            | _____             | _____            |  |
| 4. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| Sapling/Shrub Stratum (Plot size: _____)                                |                  |                   |                  |  |
| 1. _____                                                                | _____            | _____             | _____            |  |
| 2. _____                                                                | _____            | _____             | _____            |  |
| 3. _____                                                                | _____            | _____             | _____            |  |
| 4. _____                                                                | _____            | _____             | _____            |  |
| 5. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                               |                  |                   |                  |  |
| 1. <u>Holocarpha virgata</u>                                            | <u>20</u>        | <u>Y</u>          | <u>UPL</u>       |  |
| 2. <u>Bromus hordeaceus</u>                                             | <u>75</u>        | <u>Y</u>          | <u>FACU</u>      |  |
| 3. <u>Lactuca serriola</u>                                              | <u>5</u>         | <u>N</u>          | <u>UPL</u>       |  |
| 4. _____                                                                | _____            | _____             | _____            |  |
| 5. _____                                                                | _____            | _____             | _____            |  |
| 6. _____                                                                | _____            | _____             | _____            |  |
| 7. _____                                                                | _____            | _____             | _____            |  |
| 8. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: _____)                                   |                  |                   |                  |  |
| 1. _____                                                                | _____            | _____             | _____            |  |
| 2. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |  |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 0 x 3 = 0  
 FACU species 75 x 4 = 300  
 UPL species 25 x 5 = 125  
 Column Totals: 100 (A) 425 (B)  
 Prevalence Index = B/A = 4.25

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

Remarks:

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |     |                |   |                   |                  |            |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|-----|----------------|---|-------------------|------------------|------------|---------|
| Depth (inches)                                                                                                      | Matrix        |     | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                     | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-2                                                                                                                 | 10 YR 3/2     | 100 |                |   |                   |                  | Silty clay |         |
|                                                                                                                     |               |     |                |   |                   |                  |            |         |
|                                                                                                                     |               |     |                |   |                   |                  |            |         |
|                                                                                                                     |               |     |                |   |                   |                  |            |         |
|                                                                                                                     |               |     |                |   |                   |                  |            |         |
|                                                                                                                     |               |     |                |   |                   |                  |            |         |
|                                                                                                                     |               |     |                |   |                   |                  |            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Indicators for Problematic Hydric Soils <sup>3</sup> :                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5) (LRR C)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR D)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Sandy Mucky Mineral (S1)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Loamy Mucky Mineral (F1)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Vernal Pools (F9) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR B)<br><input type="checkbox"/> Reduced Vertic (F18)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Other (Explain in Remarks)                                                                                                                                                                                                 |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|                                                                                             |                                                                                          |
|---------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| <b>Restrictive Layer (if present):</b><br>Type: <u>hard pan</u><br>Depth (inches): <u>2</u> | Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
|---------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|

Remarks:

**HYDROLOGY**

| Wetland Hydrology Indicators:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Indicators (minimum of one required; check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Secondary Indicators (2 or more required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) (Nonriverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)<br><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)<br><input type="checkbox"/> Surface Soil Cracks (B6)<br><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Water Marks (B1) (Riverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Riverine)<br><input type="checkbox"/> Drift Deposits (B3) (Riverine)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> FAC-Neutral Test (D5) |

|                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| <b>Field Observations:</b><br>Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ | Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/12/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 157  
 Investigator(s): A. Godinho and A. Sennett Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): None Slope (%): 5  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.46944444 Long: -121.1841752 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: <u>n/a</u><br>Aerial signature + prev. mapped by SSHCP, but all upland vegetation at base of pipe channeling runoff from solar site                                                                      |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet:                                                                                                   |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)                                                         |
| 2. _____                                                                | _____            | _____             | _____            | Total Number of Dominant Species Across All Strata: <u>2</u> (B)                                                            |
| 3. _____                                                                | _____            | _____             | _____            | Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                      |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                             |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                             |
| Sapling/Shrub Stratum (Plot size: _____)                                |                  |                   |                  | <b>Prevalence Index worksheet:</b>                                                                                          |
| 1. _____                                                                | _____            | _____             | _____            | Total % Cover of: _____ Multiply by: _____                                                                                  |
| 2. _____                                                                | _____            | _____             | _____            | OBL species <u>0</u> x 1 = <u>0</u>                                                                                         |
| 3. _____                                                                | _____            | _____             | _____            | FACW species <u>0</u> x 2 = <u>0</u>                                                                                        |
| 4. _____                                                                | _____            | _____             | _____            | FAC species <u>0</u> x 3 = <u>0</u>                                                                                         |
| 5. _____                                                                | _____            | _____             | _____            | FACU species <u>75</u> x 4 = <u>300</u>                                                                                     |
| <u>0</u> = Total Cover                                                  |                  |                   |                  | UPL species <u>25</u> x 5 = <u>125</u>                                                                                      |
|                                                                         |                  |                   |                  | Column Totals: <u>100</u> (A) <u>425</u> (B)                                                                                |
|                                                                         |                  |                   |                  | Prevalence Index = B/A = <u>4.25</u>                                                                                        |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                               |                  |                   |                  | <b>Hydrophytic Vegetation Indicators:</b>                                                                                   |
| 1. <u>Holocarpha virgata</u>                                            | <u>20</u>        | <u>Y</u>          | <u>UPL</u>       | <input type="checkbox"/> Dominance Test is >50%                                                                             |
| 2. <u>Bromus hordeaceus</u>                                             | <u>75</u>        | <u>Y</u>          | <u>FACU</u>      | <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>                                                              |
| 3. <u>Lactuca serriola</u>                                              | <u>5</u>         | <u>N</u>          | <u>UPL</u>       | <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) |
| 4. _____                                                                | _____            | _____             | _____            | <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)                                          |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                             |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                             |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                             |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                             |
| <u>100</u> = Total Cover                                                |                  |                   |                  |                                                                                                                             |
| Woody Vine Stratum (Plot size: _____)                                   |                  |                   |                  | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.              |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                             |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                             |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                             |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  | <b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>                                     |

Remarks:



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/12/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 158  
 Investigator(s): A. Godinho and A. Sennett Section, Township, Range: Township 7N / Range 7E / Section 10  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.46977072 Long: -121.188502 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: <u>n/a</u><br>Within topographic depression at start of SWS                                                                                                                                              |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |  |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|--|
| 1. _____                                                                | _____            | _____             | _____            |  |
| 2. _____                                                                | _____            | _____             | _____            |  |
| 3. _____                                                                | _____            | _____             | _____            |  |
| 4. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |  |
| 1. _____                                                                | _____            | _____             | _____            |  |
| 2. _____                                                                | _____            | _____             | _____            |  |
| 3. _____                                                                | _____            | _____             | _____            |  |
| 4. _____                                                                | _____            | _____             | _____            |  |
| 5. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| Herb Stratum (Plot size: <u>1m x 1m</u> )                               | Absolute % Cover | Dominant Species? | Indicator Status |  |
| 1. <u>Festuca perennis</u>                                              | <u>70</u>        | <u>Y</u>          | <u>FAC</u>       |  |
| 2. <u>Hordeum marinum</u>                                               | <u>10</u>        | <u>N</u>          | <u>FAC</u>       |  |
| 3. <u>Holocarpha virgata</u>                                            | <u>10</u>        | <u>N</u>          | <u>UPL</u>       |  |
| 4. <u>Bromus hordeaceus</u>                                             | <u>10</u>        | <u>N</u>          | <u>FACU</u>      |  |
| 5. _____                                                                | _____            | _____             | _____            |  |
| 6. _____                                                                | _____            | _____             | _____            |  |
| 7. _____                                                                | _____            | _____             | _____            |  |
| 8. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status |  |
| 1. _____                                                                | _____            | _____             | _____            |  |
| 2. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |  |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)  
 Total Number of Dominant Species Across All Strata: 1 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species \_\_\_\_\_ x 1 = \_\_\_\_\_  
 FACW species \_\_\_\_\_ x 2 = \_\_\_\_\_  
 FAC species \_\_\_\_\_ x 3 = \_\_\_\_\_  
 FACU species \_\_\_\_\_ x 4 = \_\_\_\_\_  
 UPL species \_\_\_\_\_ x 5 = \_\_\_\_\_  
 Column Totals: \_\_\_\_\_ (A) \_\_\_\_\_ (B)  
 Prevalence Index = B/A = \_\_\_\_\_

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

Remarks:

**SOIL**

Sampling Point: 158

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |     |                |   |                   |                  |            |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|-----|----------------|---|-------------------|------------------|------------|---------|
| Depth (inches)                                                                                                      | Matrix        |     | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                     | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-4                                                                                                                 | 10 YR 3/1     | 100 |                |   |                   |                  | Silty clay |         |
|                                                                                                                     |               |     |                |   |                   |                  |            |         |
|                                                                                                                     |               |     |                |   |                   |                  |            |         |
|                                                                                                                     |               |     |                |   |                   |                  |            |         |
|                                                                                                                     |               |     |                |   |                   |                  |            |         |
|                                                                                                                     |               |     |                |   |                   |                  |            |         |
|                                                                                                                     |               |     |                |   |                   |                  |            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Indicators for Problematic Hydric Soils <sup>3</sup> :                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5) (LRR C)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR D)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Sandy Mucky Mineral (S1)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Loamy Mucky Mineral (F1)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Vernal Pools (F9) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR B)<br><input type="checkbox"/> Reduced Vertic (F18)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Other (Explain in Remarks)                                                                                                                                                                                                 |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|                                                                                             |                                                                                                 |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Restrictive Layer (if present):</b><br>Type: <u>hard pan</u><br>Depth (inches): <u>4</u> | <b>Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|

Remarks:  
Alliaceae bulbs observed in soil

**HYDROLOGY**

| Wetland Hydrology Indicators:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Indicators (minimum of one required; check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Secondary Indicators (2 or more required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) (Nonriverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)<br><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)<br><input checked="" type="checkbox"/> Surface Soil Cracks (B6)<br><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input checked="" type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Other (Explain in Remarks) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <input type="checkbox"/> Water Marks (B1) (Riverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Riverine)<br><input type="checkbox"/> Drift Deposits (B3) (Riverine)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> FAC-Neutral Test (D5)                   |

|                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Field Observations:</b><br>Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ | <b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  
  
Remarks:



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/12/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 159  
 Investigator(s): A. Godinho and A. Sennett Section, Township, Range: Township 7N / Range 7E / Section 15  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.46699628 Long: -121.1913315 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Associated feature: FEW-01<br>Within man made emergent wetland created by broken bubbler/ sprinkler/ irrigation off-site. Feeds into SWS-06.                                                                                 |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                                                                                                                      | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                                                                                                             |                  |                                  |                  | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                         |
| 2. _____                                                                                                                                                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                                                                                                                                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                                                                                                                                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <u>0</u> = Total Cover                                                                                                                                               |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>                                                                                                                      |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                                                                                                                                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                                                                                                                                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                                                                                                                                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                                                                                                                                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                                                                                                                                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <u>0</u> = Total Cover                                                                                                                                               |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b>                                                                                                                      |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. <u>Typha latifolia</u>                                                                                                                                            | <u>25</u>        | <u>Y</u>                         | <u>OBL</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 2. <u>Juncus balticus</u>                                                                                                                                            | <u>30</u>        | <u>Y</u>                         | <u>FACW</u>      |                                                                                                                                                                                                                                                                                                                                 |
| 3. <u>Festuca perennis</u>                                                                                                                                           | <u>45</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                                                                                                                                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                                                                                                                                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 6. _____                                                                                                                                                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 7. _____                                                                                                                                                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 8. _____                                                                                                                                                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <u>100</u> = Total Cover                                                                                                                                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Woody Vine Stratum (Plot size: _____)</b>                                                                                                                         |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                                                                                                                                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                                                                                                                                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <u>0</u> = Total Cover                                                                                                                                               |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| % Bare Ground in Herb Stratum <u>0</u>                                                                                                                               |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                 |
| Remarks:<br>2 populus fremontii saplings + polygon aviculare, Ranunculus aquatilis, Melica californica, Sonchus sp., Nightshade, Hypochaeris radicata, Rumex crispus |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |

Remarks:  
 2 populus fremontii saplings + polygon aviculare, Ranunculus aquatilis, Melica californica, Sonchus sp., Nightshade, Hypochaeris radicata, Rumex crispus

**SOIL**

Sampling Point: 159

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |    |                   |                  |         |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|----|-------------------|------------------|---------|---------|
| Depth (inches)                                                                                                      | Matrix        |    | Redox Features |    |                   |                  | Texture | Remarks |
|                                                                                                                     | Color (moist) | %  | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |         |         |
| 0-4                                                                                                                 | 10 YR 4/2     | 90 | 7.5 YR 5/8     | 10 | C                 | PL               | Si      |         |
|                                                                                                                     |               |    |                |    |                   |                  |         |         |
|                                                                                                                     |               |    |                |    |                   |                  |         |         |
|                                                                                                                     |               |    |                |    |                   |                  |         |         |
|                                                                                                                     |               |    |                |    |                   |                  |         |         |
|                                                                                                                     |               |    |                |    |                   |                  |         |         |
|                                                                                                                     |               |    |                |    |                   |                  |         |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Indicators for Problematic Hydric Soils <sup>3</sup> :                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5) (LRR C)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR D)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Sandy Mucky Mineral (S1)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Loamy Mucky Mineral (F1)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input checked="" type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Vernal Pools (F9) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR B)<br><input type="checkbox"/> Reduced Vertic (F18)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Other (Explain in Remarks)                                                                                                                                                                                                            |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|                                                                                           |                                                                                                 |
|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Restrictive Layer (if present):</b><br>Type: <u>Cobble</u><br>Depth (inches): <u>4</u> | <b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|

Remarks:

**HYDROLOGY**

| Wetland Hydrology Indicators:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Indicators (minimum of one required; check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Secondary Indicators (2 or more required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input checked="" type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) (Nonriverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)<br><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)<br><input type="checkbox"/> Surface Soil Cracks (B6)<br><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Other (Explain in Remarks)     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <input type="checkbox"/> Water Marks (B1) (Riverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Riverine)<br><input type="checkbox"/> Drift Deposits (B3) (Riverine)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> FAC-Neutral Test (D5) |

|                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Field Observations:</b><br>Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe)    Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0-12</u> | <b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/12/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 162  
 Investigator(s): A. Godinho and A. Sennett Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): C Lat: 38.46793886 Long: -121.1793992 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
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| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Remarks:<br>Point taken within SW-41. Microdepression previously mapped by SSHCP                                                                                                                                                                                                                  |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------|------------------|----------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                     |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 0 = Total Cover                                 |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. <u>Hordeum marinum</u>                       | <u>30</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                     |
| 2. <u>Rumex dentatus</u>                        | <u>15</u>        | <u>N</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                     |
| 3. <u>Briza minor</u>                           | <u>5</u>         | <u>N</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                     |
| 4. <u>Festuca myuros</u>                        | <u>5</u>         | <u>N</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                     |
| 5. <u>Festuca perennis</u>                      | <u>5</u>         | <u>N</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                     |
| 6. <u>Holocarpha virgata</u>                    | <u>15</u>        | <u>N</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                     |
| 7. <u>Bromus hordeaceus</u>                     | <u>5</u>         | <u>N</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                     |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 80 = Total Cover                                |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |
| % Bare Ground in Herb Stratum <u>20</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                     |
| Remarks:                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                     |

**SOIL**

Sampling Point: 162

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-2                                                                                                                        | 7.5 YR 3/2    | 95 | 7.5 YR 4/6     | 5 | C                 | PL/M             | Silty clay |         |
|                                                                                                                            |               |    |                |   |                   |                  |            |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/12/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 163  
 Investigator(s): A. Godinho and A. Sennett Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): None Slope (%): 5  
 Subregion (LRR): C Lat: 38.46731272 Long: -121.1807912 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>Visible aerial signature is due to a different upland plant species assemblage.                                                                                                                                                                                                       |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------------------------------|------------------|----------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                           |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| <u>0</u> = Total Cover                          |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>0</u> x 3 = <u>0</u><br>FACU species <u>75</u> x 4 = <u>300</u><br>UPL species <u>25</u> x 5 = <u>125</u><br>Column Totals: <u>100</u> (A) <u>425</u> (B)<br><br>Prevalence Index = B/A = <u>4.25</u> |
| <u>0</u> = Total Cover                          |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                         |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| <u>0</u> = Total Cover                          |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                         |
| 1. <u>Holocarpha virgata</u>                    | <u>20</u>        | <u>Y</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                         |
| 2. <u>Bromus hordeaceus</u>                     | <u>75</u>        | <u>Y</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                         |
| 3. <u>Lactuca serriola</u>                      | <u>5</u>         | <u>N</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                         |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| <u>100</u> = Total Cover                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                         |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| <u>0</u> = Total Cover                          |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                         |
| % Bare Ground in Herb Stratum <u>0</u>          |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                                                                         |

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

Remarks:



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/12/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 164  
 Investigator(s): A. Godinho and A. Sennett Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.46651503 Long: -121.180142 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No _____ |
| Remarks:<br>associated feature: VP-07<br>2 part vernal pool complex connected by a swale                                                                                                                                                 |                                                                    |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------|------------------|----------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                                                                                |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                 |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____                                                            |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. <u>Spergularia rubra</u>                     | <u>25</u>        | <u>Y</u>                         | <u>FAC</u>       | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 2. <u>Plagiobothrys bracteatus?</u>             | <u>15</u>        | <u>Y</u>                         | <u>FACW</u>      |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. <u>Eryngium castrense</u>                    | <u>15</u>        | <u>Y</u>                         | <u>OBL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. <u>Festuca perennis</u>                      | <u>10</u>        | <u>N</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. <u>Bromus hordeaceus</u>                     | <u>5</u>         | <u>N</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                |
| 6. <u>Eleocharis macrostachya</u>               | <u>10</u>        | <u>N</u>                         | <u>OBL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 75 = Total Cover                                |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                        | _____            | _____                            | _____            | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| % Bare Ground in Herb Stratum <u>25</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____                                                                                                                                                                                                                                                                                                        |

Remarks:  
 Polypogon monspeliensis  
 Briza minor  
 Perimeter dominated by Festuca perennis; Swale dominated by Fesper/ Erycas

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |    |                   |                  |            |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|----|-------------------|------------------|------------|---------|
| Depth (inches)                                                                                                      | Matrix        |    | Redox Features |    |                   |                  | Texture    | Remarks |
|                                                                                                                     | Color (moist) | %  | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-4                                                                                                                 | 7.5 YR 3/2    | 75 | 7.5 YR 4/6     | 25 | C                 | M                | Silty clay |         |
|                                                                                                                     |               |    |                |    |                   |                  |            |         |
|                                                                                                                     |               |    |                |    |                   |                  |            |         |
|                                                                                                                     |               |    |                |    |                   |                  |            |         |
|                                                                                                                     |               |    |                |    |                   |                  |            |         |
|                                                                                                                     |               |    |                |    |                   |                  |            |         |
|                                                                                                                     |               |    |                |    |                   |                  |            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Indicators for Problematic Hydric Soils <sup>3</sup> :                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5) (LRR C)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR D)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Sandy Mucky Mineral (S1)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Loamy Mucky Mineral (F1)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input checked="" type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Vernal Pools (F9) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR B)<br><input type="checkbox"/> Reduced Vertic (F18)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Other (Explain in Remarks)                                                                                                                                                                                                            |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|                                                                                             |                                                                                                 |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Restrictive Layer (if present):</b><br>Type: <u>hard pan</u><br>Depth (inches): <u>4</u> | <b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|

Remarks:

**HYDROLOGY**

| Wetland Hydrology Indicators:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Indicators (minimum of one required; check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Secondary Indicators (2 or more required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) (Nonriverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)<br><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)<br><input checked="" type="checkbox"/> Surface Soil Cracks (B6)<br><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Water Marks (B1) (Riverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Riverine)<br><input type="checkbox"/> Drift Deposits (B3) (Riverine)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> FAC-Neutral Test (D5) |
| <b>Field Observations:</b><br>Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____                                                                                                                   | <b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/12/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 165  
 Investigator(s): A. Godinho and A. Sennett Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.4653026 Long: -121.1809812 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: VP-08.                                                                                                                                                                                                   |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------|------------------|----------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)<br><br>Total Number of Dominant Species Across All Strata: _____ (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)                                                                                      |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| _____ = Total Cover                             |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = <u>4.75</u> |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                           |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                           |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 4. _____                                        | _____            | _____                            | _____            | <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)                                           |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                           |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                           |
| 1. <u>Elymus caput-medusae</u>                  | _____            | _____                            | UPL              |                                                                                                                                                                                                                                                                                                                                           |
| 2. <u>Bromus hordeaceus</u>                     | _____            | _____                            | FACU             |                                                                                                                                                                                                                                                                                                                                           |
| 3. <u>Holocarpha virgata</u>                    | _____            | _____                            | UPL              |                                                                                                                                                                                                                                                                                                                                           |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| _____ = Total Cover                             |                  |                                  |                  | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.                                                                                                                                                                                                                            |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                           |
| 1. _____                                        | _____            | _____                            | _____            | <b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                   |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                           |
| % Bare Ground in Herb Stratum <u>0</u>          |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                           |

Remarks:

**SOIL**

Sampling Point: 165

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |     |                |   |                   |                  |            |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|-----|----------------|---|-------------------|------------------|------------|---------|
| Depth (inches)                                                                                                      | Matrix        |     | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                     | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-2                                                                                                                 | 10 YR 3/2     | 100 |                |   |                   |                  | Silty clay |         |
|                                                                                                                     |               |     |                |   |                   |                  |            |         |
|                                                                                                                     |               |     |                |   |                   |                  |            |         |
|                                                                                                                     |               |     |                |   |                   |                  |            |         |
|                                                                                                                     |               |     |                |   |                   |                  |            |         |
|                                                                                                                     |               |     |                |   |                   |                  |            |         |
|                                                                                                                     |               |     |                |   |                   |                  |            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Indicators for Problematic Hydric Soils <sup>3</sup> :                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5) (LRR C)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR D)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Sandy Mucky Mineral (S1)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Loamy Mucky Mineral (F1)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Vernal Pools (F9) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR B)<br><input type="checkbox"/> Reduced Vertic (F18)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Other (Explain in Remarks)                                                                                                                                                                                                 |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|                                                                                             |                                                                                                 |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Restrictive Layer (if present):</b><br>Type: <u>hard pan</u><br>Depth (inches): <u>2</u> | <b>Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|

Remarks:

**HYDROLOGY**

| Wetland Hydrology Indicators:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Indicators (minimum of one required; check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Secondary Indicators (2 or more required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) (Nonriverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)<br><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)<br><input type="checkbox"/> Surface Soil Cracks (B6)<br><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Other (Explain in Remarks) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <input type="checkbox"/> Water Marks (B1) (Riverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Riverine)<br><input type="checkbox"/> Drift Deposits (B3) (Riverine)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> FAC-Neutral Test (D5)        |

|                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Field Observations:</b><br>Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ | <b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/11/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 167  
 Investigator(s): L. Burris and A. Sennett Section, Township, Range: Township 7N / Range 7E / Section 02  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 1%  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.48181474 Long: -121.1856085 Datum: WGS84  
 Soil Map Unit Name: Bruella sandy loam, 2 to 5 percent slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br><br>Associated Feature: P-01<br>Area in cattle enclosure, severe disturbance from overgrazing and trampling.                                                                                                                 |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------|------------------|----------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                           |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| _____ = Total Cover                             |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>_____ Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____ |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                           |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                           |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                           |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                           |
| 1. <u>Polygonum aviculare</u>                   | <u>5</u>         | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                           |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                           |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                           |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                           |
| % Bare Ground in Herb Stratum <u>95</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                           |
| Remarks:                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                           |

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

**SOIL**

Sampling Point: 167

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix        |     | Redox Features |   |                   |                  | Texture    | Remarks |
|----------------|---------------|-----|----------------|---|-------------------|------------------|------------|---------|
|                | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-3            | 7.5 YR 3/2    | 100 |                |   |                   |                  | Silty clay |         |
|                |               |     |                |   |                   |                  |            |         |
|                |               |     |                |   |                   |                  |            |         |
|                |               |     |                |   |                   |                  |            |         |
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|                |               |     |                |   |                   |                  |            |         |
|                |               |     |                |   |                   |                  |            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: clay  
 Depth (inches): 3

Hydric Soil Present? Yes  No

Remarks:

Cows have trampled soil into fine, silty soil mixed with hay and cow poop. hard clay layer about 3 inches under fine

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (Nonriverine)
- Sediment Deposits (B2) (Nonriverine)
- Drift Deposits (B3) (Nonriverine)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): \_\_\_\_\_

Wetland Hydrology Present? Yes  No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/11/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 169  
 Investigator(s): L. Burris and A. Sennet Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): flatlands Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47942413 Long: -121.1845532 Datum: WGS84  
 Soil Map Unit Name: San Joaquin silt loam, 3 - 8% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No   
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Associated feature: SW 38. Closed depression/seasonal wetland that collects water/run-off from upland/pasture to the north                                                                                                   |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                          | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------------------------------------|------------------|-------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                 | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                         |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>                          |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                                                 | _____            | _____             | _____            | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b>                          |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. <u>Eryngium sp.</u>                                                   | <u>3</u>         | <u>Y</u>          | <u>OBL</u>       | <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input checked="" type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 2. <u>Hordeum marinum</u>                                                | <u>2</u>         | <u>Y</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 6. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 7. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 8. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Woody Vine Stratum (Plot size: _____)</b>                             |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                                                 | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____                                                                                                                                                                                                                                         |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| _____ = Total Cover                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                 |
| % Bare Ground in Herb Stratum <u>95</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                 |

Remarks:  
 grazing/cattle use of wetland - soil very disturbed - minimal veg cover

**SOIL**

Sampling Point: 169

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |           |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|-----------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture   | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |
| 0-2                                                                                                                        | 7.5 Y/R 3/2   | 95 | 5 YR 5/6       | 5 | C                 | PL/M             | clay silt |         |
|                                                                                                                            |               |    |                |   |                   |                  |           |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/11/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 170  
 Investigator(s): L. Burris and A. Sennet Section, Township, Range: Township 7N / Range 7E / Section 10  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47659009 Long: -121.1897682 Datum: WGS84  
 Soil Map Unit Name: San Joaquin silt loam, 3 - 8% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Associated feature: SW39. Depression between two hills                                                                                                                                                                       |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                          | Absolute % Cover | Dominant Species? | Indicator Status |  |
|--------------------------------------------------------------------------|------------------|-------------------|------------------|--|
| 1. _____                                                                 | _____            | _____             | _____            |  |
| 2. _____                                                                 | _____            | _____             | _____            |  |
| 3. _____                                                                 | _____            | _____             | _____            |  |
| 4. _____                                                                 | _____            | _____             | _____            |  |
| _____ = Total Cover                                                      |                  |                   |                  |  |
| Sapling/Shrub Stratum (Plot size: _____)                                 | Absolute % Cover | Dominant Species? | Indicator Status |  |
| 1. _____                                                                 | _____            | _____             | _____            |  |
| 2. _____                                                                 | _____            | _____             | _____            |  |
| 3. _____                                                                 | _____            | _____             | _____            |  |
| 4. _____                                                                 | _____            | _____             | _____            |  |
| 5. _____                                                                 | _____            | _____             | _____            |  |
| _____ = Total Cover                                                      |                  |                   |                  |  |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                                | Absolute % Cover | Dominant Species? | Indicator Status |  |
| 1. <u>Festuca perennis</u>                                               | <u>30</u>        | <u>Y</u>          | <u>FAC</u>       |  |
| 2. <u>Hordeum marinum</u>                                                | <u>20</u>        | <u>Y</u>          | <u>FAC</u>       |  |
| 3. <u>Polygonum aviculare</u>                                            | <u>5</u>         | <u>N</u>          | <u>FAC</u>       |  |
| 4. <u>Lactuca serriola</u>                                               | <u>5</u>         | <u>N</u>          | <u>FACU</u>      |  |
| 5. _____                                                                 | _____            | _____             | _____            |  |
| 6. _____                                                                 | _____            | _____             | _____            |  |
| 7. _____                                                                 | _____            | _____             | _____            |  |
| 8. _____                                                                 | _____            | _____             | _____            |  |
| <u>60</u> = Total Cover                                                  |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: _____)                                    | Absolute % Cover | Dominant Species? | Indicator Status |  |
| 1. _____                                                                 | _____            | _____             | _____            |  |
| 2. _____                                                                 | _____            | _____             | _____            |  |
| _____ = Total Cover                                                      |                  |                   |                  |  |
| % Bare Ground in Herb Stratum <u>40</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |  |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species \_\_\_\_\_ x 1 = \_\_\_\_\_  
 FACW species \_\_\_\_\_ x 2 = \_\_\_\_\_  
 FAC species \_\_\_\_\_ x 3 = \_\_\_\_\_  
 FACU species \_\_\_\_\_ x 4 = \_\_\_\_\_  
 UPL species \_\_\_\_\_ x 5 = \_\_\_\_\_  
 Column Totals: \_\_\_\_\_ (A) \_\_\_\_\_ (B)  
 Prevalence Index = B/A = \_\_\_\_\_

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

Remarks:  
Rumex crispus just outside plot

**SOIL**

Sampling Point: 170

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |   |                   |                  |            |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth (inches)                                                                                                      | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                     | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-4                                                                                                                 | 7.5 Y/R 3/2   | 95 | 5 YR 4/6       | 5 | C                 | M/PL             | silty clay |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Indicators for Problematic Hydric Soils <sup>3</sup> :                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5) (LRR C)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR D)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Sandy Mucky Mineral (S1)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Loamy Mucky Mineral (F1)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input checked="" type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Vernal Pools (F9) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR B)<br><input type="checkbox"/> Reduced Vertic (F18)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Other (Explain in Remarks)                                                                                                                                                                                                            |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|                                                                                         |                                                                                                 |
|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Restrictive Layer (if present):</b><br>Type: <u>clay</u><br>Depth (inches): <u>4</u> | <b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|

Remarks:

**HYDROLOGY**

| Wetland Hydrology Indicators:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Indicators (minimum of one required; check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Secondary Indicators (2 or more required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) (Nonriverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)<br><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)<br><input checked="" type="checkbox"/> Surface Soil Cracks (B6)<br><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Water Marks (B1) (Riverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Riverine)<br><input type="checkbox"/> Drift Deposits (B3) (Riverine)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> FAC-Neutral Test (D5) |

|                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Field Observations:</b><br>Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe)    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ | <b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/11/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 171  
 Investigator(s): L. Burris and A. Sennet Section, Township, Range: Township 7N / Range 7E / Section 10  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 1  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.47649204 Long: -121.1899073 Datum: WGS84  
 Soil Map Unit Name: San Joaquin silt loam, 3 - 8% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: SW39/                                                                                                                                                                                                    |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------|------------------|-------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                          | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                                                                 |
| 2. _____                                                          | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                                          | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                                          | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                                               |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>                   |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                                          | _____            | _____             | _____            | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                                       |
| 2. _____                                                          | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                                          | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                                          | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. _____                                                          | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b>                   |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. <u>Elymus caput-medusae</u>                                    | <u>55</u>        | <u>Y</u>          | <u>NL</u>        | <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 2. <u>Bromus hordeaceus</u>                                       | <u>20</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. <u>Bromus diandrus</u>                                         | <u>10</u>        | <u>N</u>          | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. <u>Lactuca serriola</u>                                        | <u>5</u>         | <u>N</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. _____                                                          | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 6. _____                                                          | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 7. _____                                                          | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 8. _____                                                          | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <u>90</u> = Total Cover                                           |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Woody Vine Stratum (Plot size: _____)</b>                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                                          | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b><br>Yes _____ No <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                            |
| 2. _____                                                          | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                                               |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| % Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____ |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Remarks:<br>Thatch = 10%                                          |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |

**SOIL**

Sampling Point: 171

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|----------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
|                | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-3            | 7.5 Y/R 3/2   | 98 | 5 YR 4/6       | 2 | C                 | M                | silty clay |         |
|                |               |    |                |   |                   |                  |            |         |
|                |               |    |                |   |                   |                  |            |         |
|                |               |    |                |   |                   |                  |            |         |
|                |               |    |                |   |                   |                  |            |         |
|                |               |    |                |   |                   |                  |            |         |
|                |               |    |                |   |                   |                  |            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: clay  
 Depth (inches): 3

Hydric Soil Present? Yes  No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (Nonriverine)
- Sediment Deposits (B2) (Nonriverine)
- Drift Deposits (B3) (Nonriverine)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): \_\_\_\_\_

Wetland Hydrology Present? Yes  No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/11/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 173  
 Investigator(s): L. Burris and A. Sennet Section, Township, Range: Township 7N / Range 7E / Section 10  
 Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.48058094 Long: -121.1893413 Datum: WGS84  
 Soil Map Unit Name: Bruella sandy loam, 2 to 5 percent slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Depression at top of hill. Some cowpunch and grazing evident. Associated feature: SW 40                                                                                                                                      |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)          | Absolute % Cover                 | Dominant Species? | Indicator Status |                     |
|------------------------------------------|----------------------------------|-------------------|------------------|---------------------|
| 1. _____                                 |                                  |                   |                  |                     |
| 2. _____                                 |                                  |                   |                  |                     |
| 3. _____                                 |                                  |                   |                  |                     |
| 4. _____                                 |                                  |                   |                  |                     |
|                                          |                                  |                   |                  | _____ = Total Cover |
| Sapling/Shrub Stratum (Plot size: _____) |                                  |                   |                  |                     |
| 1. _____                                 |                                  |                   |                  |                     |
| 2. _____                                 |                                  |                   |                  |                     |
| 3. _____                                 |                                  |                   |                  |                     |
| 4. _____                                 |                                  |                   |                  |                     |
| 5. _____                                 |                                  |                   |                  |                     |
|                                          |                                  |                   |                  | _____ = Total Cover |
| Herb Stratum (Plot size: _____)          |                                  |                   |                  |                     |
| 1. <u>Hordeum marinum</u>                | 40                               | Y                 | FAC              |                     |
| 2. <u>Festuca perennis</u>               | 30                               | Y                 | FAC              |                     |
| 3. _____                                 |                                  |                   |                  |                     |
| 4. _____                                 |                                  |                   |                  |                     |
| 5. _____                                 |                                  |                   |                  |                     |
| 6. _____                                 |                                  |                   |                  |                     |
| 7. _____                                 |                                  |                   |                  |                     |
| 8. _____                                 |                                  |                   |                  |                     |
|                                          |                                  |                   |                  | 30 = Total Cover    |
| Woody Vine Stratum (Plot size: _____)    |                                  |                   |                  |                     |
| 1. _____                                 |                                  |                   |                  |                     |
| 2. _____                                 |                                  |                   |                  |                     |
|                                          |                                  |                   |                  | _____ = Total Cover |
| % Bare Ground in Herb Stratum <u>70</u>  | % Cover of Biotic Crust <u>0</u> |                   |                  |                     |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species \_\_\_\_\_ x 1 = \_\_\_\_\_  
 FACW species \_\_\_\_\_ x 2 = \_\_\_\_\_  
 FAC species \_\_\_\_\_ x 3 = \_\_\_\_\_  
 FACU species \_\_\_\_\_ x 4 = \_\_\_\_\_  
 UPL species \_\_\_\_\_ x 5 = \_\_\_\_\_  
 Column Totals: \_\_\_\_\_ (A) \_\_\_\_\_ (B)  
 Prevalence Index = B/A = \_\_\_\_\_

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

Remarks:

**SOIL**

Sampling Point: 173

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |   |                   |                  |            |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|------------|---------|
| Depth (inches)                                                                                                      | Matrix        |    | Redox Features |   |                   |                  | Texture    | Remarks |
|                                                                                                                     | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-4                                                                                                                 | 7.5 YR 3/1    | 96 | 5 YR 4/6       | 4 | C                 | M                | silty clay |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |
|                                                                                                                     |               |    |                |   |                   |                  |            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Indicators for Problematic Hydric Soils <sup>3</sup> :                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5) (LRR C)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR D)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Sandy Mucky Mineral (S1)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Loamy Mucky Mineral (F1)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input checked="" type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Vernal Pools (F9) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR B)<br><input type="checkbox"/> Reduced Vertic (F18)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Other (Explain in Remarks)                                                                                                                                                                                                            |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|                                                                                         |                                                                                                 |
|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Restrictive Layer (if present):</b><br>Type: <u>clay</u><br>Depth (inches): <u>4</u> | <b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|

Remarks:

**HYDROLOGY**

| Wetland Hydrology Indicators:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Indicators (minimum of one required; check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Secondary Indicators (2 or more required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) (Nonriverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)<br><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)<br><input checked="" type="checkbox"/> Surface Soil Cracks (B6)<br><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Water Marks (B1) (Riverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Riverine)<br><input type="checkbox"/> Drift Deposits (B3) (Riverine)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> FAC-Neutral Test (D5) |

|                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Field Observations:</b><br>Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe)    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ | <b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/11/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 174  
 Investigator(s): L. Burris and A. Sennet Section, Township, Range: Township 7N / Range 7E / Section 10  
 Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.48058776 Long: -121.1892727 Datum: WGS84  
 Soil Map Unit Name: Bruella sandy loam, 2 to 5 percent slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: SW 40                                                                                                                                                                                                    |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                                          | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------------------------------------------------|------------------|-------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                 | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)<br>Total Number of Dominant Species Across All Strata: _____ (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)                                                                                                                                                                                                                                                                         |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| _____ = Total Cover                                                      |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                                                                                                                                      |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>                          |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. _____                                                                 | _____            | _____             | _____            | <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.<br><br><b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/> |
| _____ = Total Cover                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Herb Stratum (Plot size: 5m x 5m)</b>                                 |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. <u>Bromus hordeaceus</u>                                              | 40               | Y                 | FACU             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. <u>Hordeum marinum</u>                                                | 10               | N                 | FAC              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. <u>Festuca perennis</u>                                               | 10               | N                 | FAC              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. <u>Convolvulus arvensis</u>                                           | 5                | N                 | NL               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 6. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 7. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 8. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 65 = Total Cover                                                         |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Woody Vine Stratum (Plot size: _____)</b>                             |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| _____ = Total Cover                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| % Bare Ground in Herb Stratum <u>35</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Remarks:<br>+ thatch                                                     |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |



## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/12/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 178  
 Investigator(s): A. Godinho and A. Sennett Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): none Slope (%): 1  
 Subregion (LRR): C Lat: 38.46793467 Long: -121.179434 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>Upland point to 162 (SW-41)                                                                                                                                                                                                                                                           |                                                                                                                     |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                           |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| <u>0</u> = Total Cover                                                  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                 |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                               | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
| 1. <u>Elymus caput-medusae</u>                                          | 50               | Y                 | UPL              |                                                                                                                                                                                                                                                                                                                                 |
| 2. <u>Bromus hordeaceus</u>                                             | 25               | Y                 | FACU             |                                                                                                                                                                                                                                                                                                                                 |
| 3. <u>Holocarpha virgata</u>                                            | 25               | Y                 | UPL              |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| <u>100</u> = Total Cover                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                 |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                 |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                 |
| Remarks:                                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                 |





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/12/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 179  
 Investigator(s): A. Godinho and A. Sennett Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.46674573 Long: -121.1801196 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Within UPL SW<br>Associated feature: n/a                                                                                                                                                                                     |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>.5</u> (A/B)                                                                                                                            |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                           |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                           |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                           |
| <u>0</u> = Total Cover                                                  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>10</u> x 2 = <u>5</u><br>FAC species <u>55</u> x 3 = <u>165</u><br>FACU species <u>30</u> x 4 = <u>120</u><br>UPL species <u>10</u> x 5 = <u>50</u><br>Column Totals: <u>100</u> (A) <u>345</u> (B)<br><br>Prevalence Index = B/A = <u>3.4</u> |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                           |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                           |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                           |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                           |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                           |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                           |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                           |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                               | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                           |
| 1. <u>Festuca perennis</u>                                              | <u>50</u>        | <u>Y</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                           |
| 2. <u>Bromus hordeaceus</u>                                             | <u>30</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                           |
| 3. <u>Holocarpha virgata</u>                                            | <u>10</u>        | <u>N</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                           |
| 4. <u>Rumex crispus</u>                                                 | <u>5</u>         | <u>N</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                           |
| 5. <u>Briza minor</u>                                                   | <u>5</u>         | <u>N</u>          | <u>FACW</u>      |                                                                                                                                                                                                                                                                                                                                                                                           |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                           |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                           |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                           |
| <u>100</u> = Total Cover                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                           |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                           |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                           |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                           |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                           |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                           |

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

Remarks:



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/12/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 180  
 Investigator(s): A. Godinho and A. Sennett Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.4664792 Long: -121.1801762 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: VP-07                                                                                                                                                                                                    |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------|------------------|----------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)<br><br>Total Number of Dominant Species Across All Strata: _____ (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)                                                                                                                                                                  |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                             |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>_____ Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = <u>475</u>                                                                        |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                        | _____            | _____                            | _____            | <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. <u>Elymus caput-medusae</u>                  | 50               | Y                                | UPL              |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. <u>Bromus hordeaceus</u>                     | 25               | Y                                | FAC              |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. <u>Holocarpha virgata</u>                    | 25               | Y                                | UPL              |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| _____ = Total Cover                             |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| % Bare Ground in Herb Stratum <u>0</u>          |                  | % Cover of Biotic Crust <u>0</u> |                  | <b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                               |
| Remarks:                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/12/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 181  
 Investigator(s): A. Godinho and A. Sennett Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.46565381 Long: -121.1807381 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Associated feature: P-02<br>Within pond 02 terrace                                                                                                                                                                           |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                          | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------------------------------------------|------------------|-------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                 | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                     |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                                                      |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____ |
| _____ = Total Cover                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                     |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>                          |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                     |
| <b>Herb Stratum (Plot size: <u>1m x 1m</u>)</b>                          |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. <u>Plagiobothrys bracteatus?</u>                                      | <u>25</u>        | <u>Y</u>          | <u>FACW</u>      |                                                                                                                                                                                                                                                                                                                                     |
| 2. <u>Rumex crispus</u>                                                  | <u>10</u>        | <u>N</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                     |
| 3. <u>Eleocharis macrostachya</u>                                        | <u>25</u>        | <u>Y</u>          | <u>OBL</u>       |                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 6. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 7. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 8. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                     |
| <b>Woody Vine Stratum (Plot size: _____)</b>                             |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                     |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>40</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                     |

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

Remarks:  
 Margin fes per.; low point= barren w/ crisch.

**SOIL**

Sampling Point: 181

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |    |                   |                  |            |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|----|-------------------|------------------|------------|---------|
| Depth (inches)                                                                                                      | Matrix        |    | Redox Features |    |                   |                  | Texture    | Remarks |
|                                                                                                                     | Color (moist) | %  | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-4                                                                                                                 | 7.5 YR 3/2    | 85 | 7.5 YR 4/6     | 15 | C                 | PL/M             | Silty clay |         |
|                                                                                                                     |               |    |                |    |                   |                  |            |         |
|                                                                                                                     |               |    |                |    |                   |                  |            |         |
|                                                                                                                     |               |    |                |    |                   |                  |            |         |
|                                                                                                                     |               |    |                |    |                   |                  |            |         |
|                                                                                                                     |               |    |                |    |                   |                  |            |         |
|                                                                                                                     |               |    |                |    |                   |                  |            |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Indicators for Problematic Hydric Soils <sup>3</sup> :                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5) (LRR C)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR D)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Sandy Mucky Mineral (S1)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Loamy Mucky Mineral (F1)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input checked="" type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Vernal Pools (F9) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR B)<br><input type="checkbox"/> Reduced Vertic (F18)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Other (Explain in Remarks)                                                                                                                                                                                                            |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|                                                                                             |                                                                                                 |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Restrictive Layer (if present):</b><br>Type: <u>hard pan</u><br>Depth (inches): <u>4</u> | <b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|

Remarks:

**HYDROLOGY**

| Wetland Hydrology Indicators:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Indicators (minimum of one required; check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Secondary Indicators (2 or more required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) (Nonriverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)<br><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)<br><input checked="" type="checkbox"/> Surface Soil Cracks (B6)<br><input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input checked="" type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Other (Explain in Remarks) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <input type="checkbox"/> Water Marks (B1) (Riverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Riverine)<br><input type="checkbox"/> Drift Deposits (B3) (Riverine)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> FAC-Neutral Test (D5)                   |

|                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Field Observations:</b><br>Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe)    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ | <b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/12/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 182  
 Investigator(s): A. Godinho and A. Sennett Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.46574166 Long: -121.1807844 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Associated feature: P-02                                                                                                                                                                                                     |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                     | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------|------------------|---------------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                                 | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)<br><br>Total Number of Dominant Species Across All Strata: _____ (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                                 | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. _____                                        | _____            | _____                                 | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                        | _____            | _____                                 | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| _____ = Total Cover                             |                  |                                       |                  | <b>Prevalence Index worksheet:</b><br>_____ Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____                                                                                                                                                                            |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                       |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. _____                                        | _____            | _____                                 | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. _____                                        | _____            | _____                                 | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. _____                                        | _____            | _____                                 | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                        | _____            | _____                                 | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. _____                                        | _____            | _____                                 | _____            | <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.<br><br><b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/> |
| _____ = Total Cover                             |                  |                                       |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b> |                  |                                       |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. <u>Elymus caput-medusae</u>                  | 50               | Y                                     | UPL              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. <u>Bromus hordeaceus</u>                     | 25               | Y                                     | FACU             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. <u>Holocarpha virgata</u>                    | 25               | Y                                     | UPL              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                        | _____            | _____                                 | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. _____                                        | _____            | _____                                 | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 6. _____                                        | _____            | _____                                 | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 7. _____                                        | _____            | _____                                 | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 8. _____                                        | _____            | _____                                 | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| _____ = Total Cover                             |                  |                                       |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                       |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. _____                                        | _____            | _____                                 | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. _____                                        | _____            | _____                                 | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| _____ = Total Cover                             |                  |                                       |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| % Bare Ground in Herb Stratum _____ 0 _____     |                  | % Cover of Biotic Crust _____ 0 _____ |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Remarks:                                        |                  |                                       |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/12/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 183  
 Investigator(s): A. Godinho and A. Sennett Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.46531133 Long: -121.180884 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Associated feature: VP-08<br>Adjacent to Pond 02.                                                                                                                                                                            |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------|------------------|----------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                                                                                |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                 |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____                                                            |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. <u>Spergularia rubra</u>                     | <u>25</u>        | <u>Y</u>                         | <u>FAC</u>       | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 2. <u>Plagiobothrys bracteatus</u>              | <u>15</u>        | <u>Y</u>                         | <u>FACW</u>      |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. <u>Eryngium castrense</u>                    | <u>15</u>        | <u>Y</u>                         | <u>OBL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. <u>Festuca perennis</u>                      | <u>10</u>        | <u>N</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. <u>Bromus hordeaceus</u>                     | <u>5</u>         | <u>N</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 6. <u>Eleocharis macrostachya</u>               | <u>10</u>        | <u>N</u>                         | <u>OBL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 100 = Total Cover                               |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                        | _____            | _____                            | _____            | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| % Bare Ground in Herb Stratum <u>0</u>          |                  | % Cover of Biotic Crust <u>0</u> |                  | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____                                                                                                                                                                                                                                                                                                        |
| Remarks:                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |

**SOIL**

Sampling Point: 183

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |    |                   |                  |            |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|----|-------------------|------------------|------------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |    |                   |                  | Texture    | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |            |         |
| 0-4                                                                                                                        | 7.5 YR 3/2    | 75 | 5 YR 4/6       | 25 | C                 | M                | Silty clay |         |
|                                                                                                                            |               |    |                |    |                   |                  |            |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/12/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 184  
 Investigator(s): A. Godinho and A. Sennett Section, Township, Range: Township 7N / Range 7E / Section 15  
 Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): None Slope (%): 5  
 Subregion (LRR): C Lat: 38.46602617 Long: -121.1888601 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>Upland plants, no change in vegetation. See photos from branchiopod dry season survey.                                                                                                                                                                                                |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |  |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|--|
| 1. _____                                                                | _____            | _____             | _____            |  |
| 2. _____                                                                | _____            | _____             | _____            |  |
| 3. _____                                                                | _____            | _____             | _____            |  |
| 4. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| Sapling/Shrub Stratum (Plot size: _____)                                |                  |                   |                  |  |
| 1. _____                                                                | _____            | _____             | _____            |  |
| 2. _____                                                                | _____            | _____             | _____            |  |
| 3. _____                                                                | _____            | _____             | _____            |  |
| 4. _____                                                                | _____            | _____             | _____            |  |
| 5. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                               |                  |                   |                  |  |
| 1. <u>Holocarpha virgata</u>                                            | <u>20</u>        | <u>Y</u>          | <u>UPL</u>       |  |
| 2. <u>Bromus hordeaceus</u>                                             | <u>75</u>        | <u>Y</u>          | <u>FACU</u>      |  |
| 3. <u>Lactuca serriola</u>                                              | <u>5</u>         | <u>N</u>          | <u>UPL</u>       |  |
| 4. _____                                                                | _____            | _____             | _____            |  |
| 5. _____                                                                | _____            | _____             | _____            |  |
| 6. _____                                                                | _____            | _____             | _____            |  |
| 7. _____                                                                | _____            | _____             | _____            |  |
| 8. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: _____)                                   |                  |                   |                  |  |
| 1. _____                                                                | _____            | _____             | _____            |  |
| 2. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |  |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 0 x 3 = 0  
 FACU species 75 x 4 = 300  
 UPL species 25 x 5 = 125  
 Column Totals: 100 (A) 425 (B)  
 Prevalence Index = B/A = 4.25

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

Remarks:





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/12/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 185  
 Investigator(s): A. Godinho and A. Sennett Section, Township, Range: Township 7N / Range 7E / Section 10  
 Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): None Slope (%): 5  
 Subregion (LRR): C Lat: 38.46881823 Long: -121.1898915 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>No break in slope or change in vegetation. Two-track road is present in this area.                                                                                                                                                                                                    |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |  |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|--|
| 1. _____                                                                | _____            | _____             | _____            |  |
| 2. _____                                                                | _____            | _____             | _____            |  |
| 3. _____                                                                | _____            | _____             | _____            |  |
| 4. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| Sapling/Shrub Stratum (Plot size: _____)                                |                  |                   |                  |  |
| 1. _____                                                                | _____            | _____             | _____            |  |
| 2. _____                                                                | _____            | _____             | _____            |  |
| 3. _____                                                                | _____            | _____             | _____            |  |
| 4. _____                                                                | _____            | _____             | _____            |  |
| 5. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                               |                  |                   |                  |  |
| 1. <u>Holocarpha virgata</u>                                            | <u>20</u>        | <u>Y</u>          | <u>UPL</u>       |  |
| 2. <u>Bromus hordeaceus</u>                                             | <u>75</u>        | <u>Y</u>          | <u>FACU</u>      |  |
| 3. <u>Lactuca serriola</u>                                              | <u>5</u>         | <u>N</u>          | <u>UPL</u>       |  |
| 4. _____                                                                | _____            | _____             | _____            |  |
| 5. _____                                                                | _____            | _____             | _____            |  |
| 6. _____                                                                | _____            | _____             | _____            |  |
| 7. _____                                                                | _____            | _____             | _____            |  |
| 8. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: _____)                                   |                  |                   |                  |  |
| 1. _____                                                                | _____            | _____             | _____            |  |
| 2. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |  |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 0 x 3 = 0  
 FACU species 75 x 4 = 300  
 UPL species 25 x 5 = 125  
 Column Totals: 100 (A) 425 (B)  
 Prevalence Index = B/A = 4.25

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

Remarks:



## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/12/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 186  
 Investigator(s): A. Godinho and A. Sennett Section, Township, Range: Township 7N / Range 7E / Section 10  
 Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): None Slope (%): 5  
 Subregion (LRR): C Lat: 38.46955453 Long: -121.1893525 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>Area of sheet flow. No break in slope or change in vegetation. Upland vegetation.                                                                                                                                                                                                     |                                                                                                                     |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                               |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| <u>0</u> = Total Cover                                                  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>0</u> x 3 = <u>0</u><br>FACU species <u>75</u> x 4 = <u>300</u><br>UPL species <u>25</u> x 5 = <u>125</u><br>Column Totals: <u>100</u> (A) <u>425</u> (B)<br>Prevalence Index = B/A = <u>4.25</u> |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| Herb Stratum (Plot size: <u>5m x 5m</u> )                               | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                     |
| 1. <u>Holocarpha virgata</u>                                            | <u>20</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                     |
| 2. <u>Bromus hordeaceus</u>                                             | <u>75</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. <u>Lactuca serriola</u>                                              | <u>5</u>         | <u>N</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| <u>100</u> = Total Cover                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

Remarks:





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/12/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 187  
 Investigator(s): A. Godinho and A. Sennett Section, Township, Range: Township 7N / Range 7E / Section 11  
 Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): None Slope (%): 5  
 Subregion (LRR): C Lat: 38.46721291 Long: -121.1869595 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>No defined swale or depression present. Area likely sheet flows during runoff events.                                                                                                                                                                                                 |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                                                                                                                                                                                                                                                                                                                                     | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                                                                                                                                                                                                                                                                                                                            | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                           |
| 2. _____                                                                                                                                                                                                                                                                                                                                                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 3. _____                                                                                                                                                                                                                                                                                                                                                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 4. _____                                                                                                                                                                                                                                                                                                                                                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| <u>0</u> = Total Cover                                                                                                                                                                                                                                                                                                                                                              |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>0</u> x 3 = <u>0</u><br>FACU species <u>75</u> x 4 = <u>300</u><br>UPL species <u>25</u> x 5 = <u>125</u><br>Column Totals: <u>100</u> (A) <u>425</u> (B)<br><br>Prevalence Index = B/A = <u>4.25</u> |
| <u>0</u> = Total Cover                                                                                                                                                                                                                                                                                                                                                              |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>                                                                                                                                                                                                                                                                                                                                     |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                         |
| 1. _____                                                                                                                                                                                                                                                                                                                                                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 2. _____                                                                                                                                                                                                                                                                                                                                                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 3. _____                                                                                                                                                                                                                                                                                                                                                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 4. _____                                                                                                                                                                                                                                                                                                                                                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 5. _____                                                                                                                                                                                                                                                                                                                                                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| <u>0</u> = Total Cover                                                                                                                                                                                                                                                                                                                                                              |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Herb Stratum (Plot size: <u>5m x 5m</u>)</b>                                                                                                                                                                                                                                                                                                                                     |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                         |
| 1. <u>Holocarpha virgata</u>                                                                                                                                                                                                                                                                                                                                                        | <u>20</u>        | <u>Y</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                         |
| 2. <u>Bromus hordeaceus</u>                                                                                                                                                                                                                                                                                                                                                         | <u>75</u>        | <u>Y</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                         |
| 3. <u>Lactuca serriola</u>                                                                                                                                                                                                                                                                                                                                                          | <u>5</u>         | <u>N</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                         |
| 4. _____                                                                                                                                                                                                                                                                                                                                                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 5. _____                                                                                                                                                                                                                                                                                                                                                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 6. _____                                                                                                                                                                                                                                                                                                                                                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 7. _____                                                                                                                                                                                                                                                                                                                                                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 8. _____                                                                                                                                                                                                                                                                                                                                                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| <u>100</u> = Total Cover                                                                                                                                                                                                                                                                                                                                                            |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Woody Vine Stratum (Plot size: _____)</b>                                                                                                                                                                                                                                                                                                                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                         |
| 1. _____                                                                                                                                                                                                                                                                                                                                                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| 2. _____                                                                                                                                                                                                                                                                                                                                                                            | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                         |
| <u>0</u> = Total Cover                                                                                                                                                                                                                                                                                                                                                              |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                         |
| % Bare Ground in Herb Stratum <u>0</u>                                                                                                                                                                                                                                                                                                                                              |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                                                                         |
| Remarks:                                                                                                                                                                                                                                                                                                                                                                            |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                         |
| <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.                                                                                                                                                                                                                                                                      |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                          |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                         |



## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 188  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): C Lat: 38.46554546 Long: -121.1814737 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Point taken within feature previously mapped as "swale" by SSHCP                                                                                                                                                             |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                        | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------------------------|------------------|----------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                               | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                               |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                                    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                               | _____            | _____                            | _____            | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>0</u> x 3 = <u>0</u><br>FACU species <u>40</u> x 4 = <u>160</u><br>UPL species <u>60</u> x 5 = <u>300</u><br>Column Totals: <u>100</u> (A) <u>360</u> (B)<br>Prevalence Index = B/A = <u>3.6</u>  |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                                    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Herb Stratum (Plot size: <u>1m<sup>2</sup></u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| 1. <u>Ely. cap.-med.</u>                               | <u>40</u>        | <u>Y</u>                         | <u>UPL</u>       | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 2. <u>Bro. hor.</u>                                    | <u>40</u>        | <u>Y</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. <u>Hol. vir.</u>                                    | <u>20</u>        | <u>Y</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 6. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 7. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 8. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                                    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Woody Vine Stratum (Plot size: _____)</b>           |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                               | _____            | _____                            | _____            | <b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                             |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                                    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| % Bare Ground in Herb Stratum <u>0</u>                 |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                                                                     |

Remarks:





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 189  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): C Lat: 38.46553731 Long: -121.1818285 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Point taken within feature previously mapped by SSHCP                                                                                                                                                                        |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                  | Absolute % Cover | Dominant Species?                | Indicator Status |  |
|--------------------------------------------------|------------------|----------------------------------|------------------|--|
| 1. _____                                         | _____            | _____                            | _____            |  |
| 2. _____                                         | _____            | _____                            | _____            |  |
| 3. _____                                         | _____            | _____                            | _____            |  |
| 4. _____                                         | _____            | _____                            | _____            |  |
| 0 = Total Cover                                  |                  |                                  |                  |  |
| Sapling/Shrub Stratum (Plot size: _____)         |                  |                                  |                  |  |
| 1. _____                                         | _____            | _____                            | _____            |  |
| 2. _____                                         | _____            | _____                            | _____            |  |
| 3. _____                                         | _____            | _____                            | _____            |  |
| 4. _____                                         | _____            | _____                            | _____            |  |
| 5. _____                                         | _____            | _____                            | _____            |  |
| 0 = Total Cover                                  |                  |                                  |                  |  |
| Herb Stratum (Plot size: <u>1m<sup>2</sup></u> ) |                  |                                  |                  |  |
| 1. <u>Ely. cap.-med.</u>                         | 40               | Y                                | UPL              |  |
| 2. <u>Bro. hor.</u>                              | 40               | Y                                | FACU             |  |
| 3. <u>Hol. vir.</u>                              | 20               | Y                                | UPL              |  |
| 4. _____                                         | _____            | _____                            | _____            |  |
| 5. _____                                         | _____            | _____                            | _____            |  |
| 6. _____                                         | _____            | _____                            | _____            |  |
| 7. _____                                         | _____            | _____                            | _____            |  |
| 8. _____                                         | _____            | _____                            | _____            |  |
| 100 = Total Cover                                |                  |                                  |                  |  |
| Woody Vine Stratum (Plot size: _____)            |                  |                                  |                  |  |
| 1. _____                                         | _____            | _____                            | _____            |  |
| 2. _____                                         | _____            | _____                            | _____            |  |
| 0 = Total Cover                                  |                  |                                  |                  |  |
| % Bare Ground in Herb Stratum <u>0</u>           |                  | % Cover of Biotic Crust <u>0</u> |                  |  |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 3 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 0 x 3 = 0  
 FACU species 40 x 4 = 160  
 UPL species 60 x 5 = 300  
 Column Totals: 100 (A) 360 (B)  
 Prevalence Index = B/A = 3.6

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

Remarks:



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 191  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): bottomland Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): C Lat: 38.46520115 Long: -121.1824157 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Point taken within feature previously mapped by SSHCP                                                                                                                                                                        |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                          | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------------------------------------------------|------------------|-------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                 | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)                                                                                                                               |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| <u>0</u> = Total Cover                                                   |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>35</u> x 3 = <u>105</u><br>FACU species <u>25</u> x 4 = <u>100</u><br>UPL species <u>25</u> x 5 = <u>125</u><br>Column Totals: <u>85</u> (A) <u>330</u> (B)<br>Prevalence Index = B/A = <u>3.9</u> |
| Sapling/Shrub Stratum (Plot size: _____)                                 | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| <u>0</u> = Total Cover                                                   |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                      |
| Herb Stratum (Plot size: <u>1m<sup>2</sup></u> )                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. <u>Hor. mar.</u>                                                      | <u>25</u>        | <u>Y</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. <u>Bri. min.</u>                                                      | <u>10</u>        | <u>N</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. <u>Ely. cap-med.</u>                                                  | <u>25</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. <u>Bro. hor.</u>                                                      | <u>25</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 6. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 7. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 8. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| <u>85</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                      |
| Woody Vine Stratum (Plot size: _____)                                    | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                      |
| <u>0</u> = Total Cover                                                   |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                      |
| % Bare Ground in Herb Stratum <u>15</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                      |

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

Remarks:  
 15% thatch





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 192  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): \_\_\_\_\_ Lat: 38.46502242 Long: -121.1825273 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Within SW-43                                                                                                                                                                                                                 |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                        | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------------------|------------------|----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                               | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                         |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 0 = Total Cover                                        |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 0 = Total Cover                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Herb Stratum (Plot size: <u>1m<sup>2</sup></u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. <u>Hor. mar.</u>                                    | <u>75</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 6. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 7. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 8. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 75 = Total Cover                                       |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Woody Vine Stratum (Plot size: _____)</b>           |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 0 = Total Cover                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| % Bare Ground in Herb Stratum <u>25</u>                |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                 |

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

Remarks:

**SOIL**

Sampling Point: 192

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |    |                   |                  |         |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|----|-------------------|------------------|---------|---------|
| Depth (inches)                                                                                                      | Matrix        |    | Redox Features |    |                   |                  | Texture | Remarks |
|                                                                                                                     | Color (moist) | %  | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |         |         |
| 0-4                                                                                                                 | 7.5YR 3/1     | 90 | 7.5YR 4/6      | 10 | C                 | M                | SiC     |         |
|                                                                                                                     |               |    |                |    |                   |                  |         |         |
|                                                                                                                     |               |    |                |    |                   |                  |         |         |
|                                                                                                                     |               |    |                |    |                   |                  |         |         |
|                                                                                                                     |               |    |                |    |                   |                  |         |         |
|                                                                                                                     |               |    |                |    |                   |                  |         |         |
|                                                                                                                     |               |    |                |    |                   |                  |         |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Indicators for Problematic Hydric Soils <sup>3</sup> :                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5) (LRR C)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR D)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Sandy Mucky Mineral (S1)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Loamy Mucky Mineral (F1)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input checked="" type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Vernal Pools (F9) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR B)<br><input type="checkbox"/> Reduced Vertic (F18)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Other (Explain in Remarks)                                                                                                                                                                                                            |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|                                                                                            |                                                                                                 |
|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Restrictive Layer (if present):</b><br>Type: <u>Hardpan</u><br>Depth (inches): <u>4</u> | <b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|

Remarks:

**HYDROLOGY**

| Wetland Hydrology Indicators:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Indicators (minimum of one required; check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Secondary Indicators (2 or more required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) (Nonriverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)<br><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)<br><input checked="" type="checkbox"/> Surface Soil Cracks (B6)<br><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Other (Explain in Remarks) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <input type="checkbox"/> Water Marks (B1) (Riverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Riverine)<br><input type="checkbox"/> Drift Deposits (B3) (Riverine)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> FAC-Neutral Test (D5)        |

|                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Field Observations:</b><br>Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe)    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ | <b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 193  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): bottomland Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): C Lat: 38.46490722 Long: -121.1824143 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Point taken within feature previously mapped by SSHCP                                                                                                                                                                        |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                        | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------------------------------------|------------------|----------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                               | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                              |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 0 = Total Cover                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. _____                                               | _____            | _____                            | _____            | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>0</u> x 3 = <u>0</u><br>FACU species <u>40</u> x 4 = <u>160</u><br>UPL species <u>60</u> x 5 = <u>300</u><br>Column Totals: <u>100</u> (A) <u>360</u> (B)<br>Prevalence Index = B/A = <u>3.6</u> |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 0 = Total Cover                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Herb Stratum (Plot size: <u>1m<sup>2</sup></u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. <u>Ely. cap.-med.</u>                               | <u>40</u>        | <u>Y</u>                         | <u>UPL</u>       | <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)                                                                                    |
| 2. <u>Bro. hor.</u>                                    | <u>40</u>        | <u>Y</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. <u>Hol. vir.</u>                                    | <u>20</u>        | <u>Y</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 6. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 7. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 8. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 100 = Total Cover                                      |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Woody Vine Stratum (Plot size: _____)</b>           |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. _____                                               | _____            | _____                            | _____            | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.                                                                                                                                                                                                                                                                     |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 0 = Total Cover                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| % Bare Ground in Herb Stratum <u>0</u>                 |                  | % Cover of Biotic Crust <u>0</u> |                  | <b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                            |

Remarks:





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 194  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): C Lat: 38.46489628 Long: -121.1828555 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br><u>Upland point to 216 (SW-44)</u>                                                                                                                                                                                           |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------|------------------|----------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <u>0</u> = Total Cover                          |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                        | _____            | _____                            | _____            | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>0</u> x 3 = <u>0</u><br>FACU species <u>40</u> x 4 = <u>160</u><br>UPL species <u>60</u> x 5 = <u>300</u><br>Column Totals: <u>100</u> (A) <u>360</u> (B)<br>Prevalence Index = B/A = <u>3.6</u>                                    |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <u>0</u> = Total Cover                          |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Herb Stratum (Plot size: <u>1m^2</u>)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. <u>Ely. cap.-med.</u>                        | <u>40</u>        | <u>Y</u>                         | <u>UPL</u>       | <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 2. <u>Bro. hor.</u>                             | <u>40</u>        | <u>Y</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. <u>Hol. vir.</u>                             | <u>20</u>        | <u>Y</u>                         | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <u>100</u> = Total Cover                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                        | _____            | _____                            | _____            | <b>Hydrophytic Vegetation Present?</b><br>Yes _____ No <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                            |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <u>0</u> = Total Cover                          |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| % Bare Ground in Herb Stratum <u>0</u>          |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |

Remarks:



## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 195  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): C Lat: 38.4649904 Long: -121.1835042 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Point taken within VP-09. Isolated pool on hillslope. Some cow punch                                                                                                                                                         |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                        | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------|------------------|----------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                               | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                                                                                        |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                               | _____            | _____                            | _____            | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Herb Stratum (Plot size: <u>1m<sup>2</sup></u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. <u>Pol. mon.</u>                                    | 40               | Y                                | FACW             | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 2. <u>Fes. per.</u>                                    | 10               | N                                | FAC              |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. <u>Cro. set.</u>                                    | 5                | N                                | NL               |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. <u>Epi. bra.</u>                                    | 5                | N                                | FAC              |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 6. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 7. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 8. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 60 = Total Cover                                       |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Woody Vine Stratum (Plot size: _____)</b>           |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                               | _____            | _____                            | _____            | <b>Hydrophytic Vegetation Present?</b><br>Yes <input checked="" type="checkbox"/> No _____                                                                                                                                                                                                                                                                                                     |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| % Bare Ground in Herb Stratum <u>40</u>                |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| Remarks:                                               |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |

**SOIL**

Sampling Point: 195

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |   |                   |                  |         |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches)                                                                                                      | Matrix        |    | Redox Features |   |                   |                  | Texture | Remarks |
|                                                                                                                     | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |         |
| 0-5                                                                                                                 | 7.5YR 3/2     | 96 | 5YR 4/6        | 4 | C                 | PL               | SiC     |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Indicators for Problematic Hydric Soils <sup>3</sup> :                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5) (LRR C)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR D)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Sandy Mucky Mineral (S1)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Loamy Mucky Mineral (F1)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input checked="" type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Vernal Pools (F9) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR B)<br><input type="checkbox"/> Reduced Vertic (F18)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Other (Explain in Remarks)                                                                                                                                                                                                            |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|                                                                                         |                                                                                                 |
|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Restrictive Layer (if present):</b><br>Type: <u>Clay</u><br>Depth (inches): <u>6</u> | <b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|

Remarks:

**HYDROLOGY**

| Wetland Hydrology Indicators:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Indicators (minimum of one required; check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Secondary Indicators (2 or more required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) (Nonriverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)<br><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)<br><input type="checkbox"/> Surface Soil Cracks (B6)<br><input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Other (Explain in Remarks) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <input type="checkbox"/> Water Marks (B1) (Riverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Riverine)<br><input type="checkbox"/> Drift Deposits (B3) (Riverine)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> FAC-Neutral Test (D5)        |

|                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Field Observations:</b><br>Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe)    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ | <b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 196  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): bottomland Local relief (concave, convex, none): none Slope (%): 2  
 Subregion (LRR): C Lat: 38.46493426 Long: -121.183626 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Point taken within "swale" feature previously mapped by SSHCP                                                                                                                                                                |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                  | Absolute % Cover | Dominant Species?                | Indicator Status |  |
|--------------------------------------------------|------------------|----------------------------------|------------------|--|
| 1. _____                                         | _____            | _____                            | _____            |  |
| 2. _____                                         | _____            | _____                            | _____            |  |
| 3. _____                                         | _____            | _____                            | _____            |  |
| 4. _____                                         | _____            | _____                            | _____            |  |
| 0 = Total Cover                                  |                  |                                  |                  |  |
| Sapling/Shrub Stratum (Plot size: _____)         |                  |                                  |                  |  |
| 1. _____                                         | _____            | _____                            | _____            |  |
| 2. _____                                         | _____            | _____                            | _____            |  |
| 3. _____                                         | _____            | _____                            | _____            |  |
| 4. _____                                         | _____            | _____                            | _____            |  |
| 5. _____                                         | _____            | _____                            | _____            |  |
| 0 = Total Cover                                  |                  |                                  |                  |  |
| Herb Stratum (Plot size: <u>1m<sup>2</sup></u> ) |                  |                                  |                  |  |
| 1. <u>Ely. cap.-med.</u>                         | <u>40</u>        | <u>Y</u>                         | <u>UPL</u>       |  |
| 2. <u>Bro. hor.</u>                              | <u>40</u>        | <u>Y</u>                         | <u>FACU</u>      |  |
| 3. <u>Hol. vir.</u>                              | <u>20</u>        | <u>Y</u>                         | <u>UPL</u>       |  |
| 4. _____                                         | _____            | _____                            | _____            |  |
| 5. _____                                         | _____            | _____                            | _____            |  |
| 6. _____                                         | _____            | _____                            | _____            |  |
| 7. _____                                         | _____            | _____                            | _____            |  |
| 8. _____                                         | _____            | _____                            | _____            |  |
| 100 = Total Cover                                |                  |                                  |                  |  |
| Woody Vine Stratum (Plot size: _____)            |                  |                                  |                  |  |
| 1. _____                                         | _____            | _____                            | _____            |  |
| 2. _____                                         | _____            | _____                            | _____            |  |
| 0 = Total Cover                                  |                  |                                  |                  |  |
| % Bare Ground in Herb Stratum <u>0</u>           |                  | % Cover of Biotic Crust <u>0</u> |                  |  |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 3 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 0 x 3 = 0  
 FACU species 40 x 4 = 160  
 UPL species 60 x 5 = 300  
 Column Totals: 100 (A) 360 (B)  
 Prevalence Index = B/A = 3.6

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

Remarks:

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |     |                |   |                   |                  |         |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches)                                                                                                      | Matrix        |     | Redox Features |   |                   |                  | Texture | Remarks |
|                                                                                                                     | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |         |
| 0-2                                                                                                                 | 10YR 3/2      | 100 |                |   |                   |                  | SiC     |         |
|                                                                                                                     |               |     |                |   |                   |                  |         |         |
|                                                                                                                     |               |     |                |   |                   |                  |         |         |
|                                                                                                                     |               |     |                |   |                   |                  |         |         |
|                                                                                                                     |               |     |                |   |                   |                  |         |         |
|                                                                                                                     |               |     |                |   |                   |                  |         |         |
|                                                                                                                     |               |     |                |   |                   |                  |         |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Indicators for Problematic Hydric Soils <sup>3</sup> :                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5) (LRR C)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR D)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Sandy Mucky Mineral (S1)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Loamy Mucky Mineral (F1)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Vernal Pools (F9) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR B)<br><input type="checkbox"/> Reduced Vertic (F18)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Other (Explain in Remarks)                                                                                                                                                                                                 |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|                                                                                            |                                                                                                 |
|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Restrictive Layer (if present):</b><br>Type: <u>Hardpan</u><br>Depth (inches): <u>2</u> | <b>Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|

Remarks:

**HYDROLOGY**

| Wetland Hydrology Indicators:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Indicators (minimum of one required; check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Secondary Indicators (2 or more required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) (Nonriverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)<br><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)<br><input type="checkbox"/> Surface Soil Cracks (B6)<br><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Other (Explain in Remarks) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <input type="checkbox"/> Water Marks (B1) (Riverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Riverine)<br><input type="checkbox"/> Drift Deposits (B3) (Riverine)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> FAC-Neutral Test (D5)        |

|                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Field Observations:</b><br>Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ | <b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 197  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): mild hillslope Local relief (concave, convex, none): concave Slope (%): 0.1  
 Subregion (LRR): C Lat: 38.46549479 Long: -121.1845093 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: WGS84

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Within VP-12. Wetland at base of upland swale                                                                                                                                                                                |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                        | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------------------|------------------|----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                               | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                         |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 0 = Total Cover                                        |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 0 = Total Cover                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Herb Stratum (Plot size: <u>1m<sup>2</sup></u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. <u>Ery. cas.</u>                                    | <u>35</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 2. <u>Pla. bra.</u>                                    | <u>20</u>        | <u>Y</u>                         | <u>FACW</u>      |                                                                                                                                                                                                                                                                                                                                 |
| 3. <u>Pol. mon.</u>                                    | <u>10</u>        | <u>N</u>                         | <u>FACW</u>      |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 6. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 7. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 8. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 65 = Total Cover                                       |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Woody Vine Stratum (Plot size: _____)</b>           |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 0 = Total Cover                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| % Bare Ground in Herb Stratum <u>35</u>                |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                 |
| Remarks:                                               |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |

**SOIL**

Sampling Point: 197

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |   |                   |                  |         |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches)                                                                                                      | Matrix        |    | Redox Features |   |                   |                  | Texture | Remarks |
|                                                                                                                     | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |         |
| 0-3                                                                                                                 | 7.5YR 3/1     | 95 | 5YR 4/6        | 5 | C                 | M/PL             | SiC     |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Indicators for Problematic Hydric Soils <sup>3</sup> :                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5) (LRR C)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR D)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Sandy Mucky Mineral (S1)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Loamy Mucky Mineral (F1)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input checked="" type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Vernal Pools (F9) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR B)<br><input type="checkbox"/> Reduced Vertic (F18)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Other (Explain in Remarks)                                                                                                                                                                                                            |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|                                                                                         |                                                                                                 |
|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Restrictive Layer (if present):</b><br>Type: <u>Clay</u><br>Depth (inches): <u>3</u> | <b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|

Remarks:

**HYDROLOGY**

| Wetland Hydrology Indicators:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Indicators (minimum of one required; check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Secondary Indicators (2 or more required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) (Nonriverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)<br><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)<br><input type="checkbox"/> Surface Soil Cracks (B6)<br><input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Other (Explain in Remarks) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <input type="checkbox"/> Water Marks (B1) (Riverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Riverine)<br><input type="checkbox"/> Drift Deposits (B3) (Riverine)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> FAC-Neutral Test (D5)                   |

|                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Field Observations:</b><br>Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe)    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ | <b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 198  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): C Lat: 38.46546979 Long: -121.184873 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: PEM1A - Freshwater Eri

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Within VP-13. Low point within SWS                                                                                                                                                                                           |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                        | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------------------|------------------|----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                               | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                         |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 0 = Total Cover                                        |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 0 = Total Cover                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Herb Stratum (Plot size: <u>1m<sup>2</sup></u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. <u>Ele. mac.</u>                                    | 40               | Y                                | FAC              |                                                                                                                                                                                                                                                                                                                                 |
| 2. <u>Ery. cas.</u>                                    | 10               | N                                | OBL              |                                                                                                                                                                                                                                                                                                                                 |
| 3. <u>Fes. per.</u>                                    | 20               | Y                                | FAC              |                                                                                                                                                                                                                                                                                                                                 |
| 4. <u>Unk grass</u>                                    | 5                | N                                | -                |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 6. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 7. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 8. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 75 = Total Cover                                       |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Woody Vine Stratum (Plot size: _____)</b>           |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 0 = Total Cover                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| % Bare Ground in Herb Stratum <u>25</u>                |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                 |
| Remarks:                                               |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

**SOIL**

Sampling Point: 198

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |   |                   |                  |         |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches)                                                                                                      | Matrix        |    | Redox Features |   |                   |                  | Texture | Remarks |
|                                                                                                                     | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |         |
| 0-4                                                                                                                 | 7.5YR 3/2     | 95 | 5YR 4/6        | 5 | C                 | M/PL             | SiC     |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Indicators for Problematic Hydric Soils <sup>3</sup> :                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5) (LRR C)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR D)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Sandy Mucky Mineral (S1)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Loamy Mucky Mineral (F1)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input checked="" type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Vernal Pools (F9) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR B)<br><input type="checkbox"/> Reduced Vertic (F18)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Other (Explain in Remarks)                                                                                                                                                                                                            |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|                                                                                         |                                                                                                 |
|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Restrictive Layer (if present):</b><br>Type: <u>Clay</u><br>Depth (inches): <u>4</u> | <b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|

Remarks:

**HYDROLOGY**

| Wetland Hydrology Indicators:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Indicators (minimum of one required; check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Secondary Indicators (2 or more required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) (Nonriverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)<br><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)<br><input checked="" type="checkbox"/> Surface Soil Cracks (B6)<br><input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Other (Explain in Remarks) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <input type="checkbox"/> Water Marks (B1) (Riverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Riverine)<br><input type="checkbox"/> Drift Deposits (B3) (Riverine)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> FAC-Neutral Test (D5)                   |

|                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Field Observations:</b><br>Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe)    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ | <b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 199  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): C Lat: 38.465708 Long: -121.1852529 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
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| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Within SW-45. Low spot on terrace between hills                                                                                                                                                                              |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                  | Absolute % Cover | Dominant Species?                | Indicator Status |  |
|--------------------------------------------------|------------------|----------------------------------|------------------|--|
| 1. _____                                         | _____            | _____                            | _____            |  |
| 2. _____                                         | _____            | _____                            | _____            |  |
| 3. _____                                         | _____            | _____                            | _____            |  |
| 4. _____                                         | _____            | _____                            | _____            |  |
| 0 = Total Cover                                  |                  |                                  |                  |  |
| Sapling/Shrub Stratum (Plot size: _____)         |                  |                                  |                  |  |
| 1. _____                                         | _____            | _____                            | _____            |  |
| 2. _____                                         | _____            | _____                            | _____            |  |
| 3. _____                                         | _____            | _____                            | _____            |  |
| 4. _____                                         | _____            | _____                            | _____            |  |
| 5. _____                                         | _____            | _____                            | _____            |  |
| 0 = Total Cover                                  |                  |                                  |                  |  |
| Herb Stratum (Plot size: <u>1m<sup>2</sup></u> ) |                  |                                  |                  |  |
| 1. <u>Fes. per.</u>                              | 40               | Y                                | FAC              |  |
| 2. <u>Hol. vir.</u>                              | 10               | N                                | UPL              |  |
| 3. <u>Hor. mar.</u>                              | 10               | N                                | FAC              |  |
| 4. _____                                         | _____            | _____                            | _____            |  |
| 5. _____                                         | _____            | _____                            | _____            |  |
| 6. _____                                         | _____            | _____                            | _____            |  |
| 7. _____                                         | _____            | _____                            | _____            |  |
| 8. _____                                         | _____            | _____                            | _____            |  |
| 60 = Total Cover                                 |                  |                                  |                  |  |
| Woody Vine Stratum (Plot size: _____)            |                  |                                  |                  |  |
| 1. _____                                         | _____            | _____                            | _____            |  |
| 2. _____                                         | _____            | _____                            | _____            |  |
| 0 = Total Cover                                  |                  |                                  |                  |  |
| % Bare Ground in Herb Stratum <u>40</u>          |                  | % Cover of Biotic Crust <u>0</u> |                  |  |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)  
 Total Number of Dominant Species Across All Strata: 1 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species \_\_\_\_\_ x 1 = \_\_\_\_\_  
 FACW species \_\_\_\_\_ x 2 = \_\_\_\_\_  
 FAC species \_\_\_\_\_ x 3 = \_\_\_\_\_  
 FACU species \_\_\_\_\_ x 4 = \_\_\_\_\_  
 UPL species \_\_\_\_\_ x 5 = \_\_\_\_\_  
 Column Totals: \_\_\_\_\_ (A) \_\_\_\_\_ (B)  
 Prevalence Index = B/A = \_\_\_\_\_

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

Remarks:

**SOIL**

Sampling Point: 199

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |         |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|---------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |         |
| 0-4                                                                                                                        | 7.5YR 3/2     | 96 | 5YR 4/6        | 4 | C                 | PL               | SiC     |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 200  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 0.5  
 Subregion (LRR): C Lat: 38.46570364 Long: -121.1852055 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br><u>Upland point to 199 (SW-45)</u>                                                                                                                                                                                           |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                              |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>0</u> = Total Cover                                                  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>0</u> x 3 = <u>0</u><br>FACU species <u>40</u> x 4 = <u>160</u><br>UPL species <u>60</u> x 5 = <u>300</u><br>Column Totals: <u>100</u> (A) <u>360</u> (B)<br>Prevalence Index = B/A = <u>3.6</u> |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| Herb Stratum (Plot size: <u>1m<sup>2</sup></u> )                        | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. <u>Ely. cap.-med.</u>                                                | <u>40</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. <u>Bro. hor.</u>                                                     | <u>40</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. <u>Hol. vir.</u>                                                     | <u>20</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>100</u> = Total Cover                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

Remarks:



## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 201  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 2  
 Subregion (LRR): C Lat: 38.46446248 Long: -121.1864083 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: PEM1A - Freshwater Eri

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Point taken within linear feature previously mapped by SSHCP                                                                                                                                                                 |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                              |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>0</u> = Total Cover                                                  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>0</u> x 3 = <u>0</u><br>FACU species <u>40</u> x 4 = <u>160</u><br>UPL species <u>60</u> x 5 = <u>300</u><br>Column Totals: <u>100</u> (A) <u>360</u> (B)<br>Prevalence Index = B/A = <u>3.6</u> |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| Herb Stratum (Plot size: <u>1m<sup>2</sup></u> )                        | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. <u>Ely. cap.-med.</u>                                                | <u>40</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. <u>Bro. hor.</u>                                                     | <u>40</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. <u>Hol. vir.</u>                                                     | <u>20</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>100</u> = Total Cover                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

Remarks:





## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: \_\_\_\_\_ Sampling Point: 203  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): C Lat: 38.46397712 Long: -121.1857778 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Within SW-46. Depression in slight hillslope                                                                                                                                                                                 |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                                          | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet:                                                                                                   |
|--------------------------------------------------------------------------|------------------|-------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                 | _____            | _____             | _____            | Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)                                                         |
| 2. _____                                                                 | _____            | _____             | _____            | Total Number of Dominant Species Across All Strata: <u>2</u> (B)                                                            |
| 3. _____                                                                 | _____            | _____             | _____            | Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                    |
| 4. _____                                                                 | _____            | _____             | _____            |                                                                                                                             |
| 0 = Total Cover                                                          |                  |                   |                  |                                                                                                                             |
| Sapling/Shrub Stratum (Plot size: _____)                                 | Absolute % Cover | Dominant Species? | Indicator Status | Prevalence Index worksheet:                                                                                                 |
| 1. _____                                                                 | _____            | _____             | _____            | Total % Cover of: _____ Multiply by: _____                                                                                  |
| 2. _____                                                                 | _____            | _____             | _____            | OBL species _____ x 1 = _____                                                                                               |
| 3. _____                                                                 | _____            | _____             | _____            | FACW species _____ x 2 = _____                                                                                              |
| 4. _____                                                                 | _____            | _____             | _____            | FAC species _____ x 3 = _____                                                                                               |
| 5. _____                                                                 | _____            | _____             | _____            | FACU species _____ x 4 = _____                                                                                              |
| 0 = Total Cover                                                          |                  |                   |                  | UPL species _____ x 5 = _____                                                                                               |
|                                                                          |                  |                   |                  | Column Totals: _____ (A) _____ (B)                                                                                          |
|                                                                          |                  |                   |                  | Prevalence Index = B/A = _____                                                                                              |
| Herb Stratum (Plot size: <u>1m<sup>2</sup></u> )                         | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Indicators:                                                                                          |
| 1. <u>Fes. per.</u>                                                      | <u>30</u>        | <u>Y</u>          | <u>FAC</u>       | <input checked="" type="checkbox"/> Dominance Test is >50%                                                                  |
| 2. <u>Hor. mar.</u>                                                      | <u>20</u>        | <u>Y</u>          | <u>FAC</u>       | <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>                                                              |
| 3. <u>Rum. cri.</u>                                                      | <u>5</u>         | <u>N</u>          | <u>FAC</u>       | <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) |
| 4. <u>Hol. vir.</u>                                                      | <u>2</u>         | <u>N</u>          | <u>UPL</u>       | <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)                                          |
| 5. _____                                                                 | _____            | _____             | _____            |                                                                                                                             |
| 6. _____                                                                 | _____            | _____             | _____            |                                                                                                                             |
| 7. _____                                                                 | _____            | _____             | _____            |                                                                                                                             |
| 8. _____                                                                 | _____            | _____             | _____            |                                                                                                                             |
| 57 = Total Cover                                                         |                  |                   |                  |                                                                                                                             |
| Woody Vine Stratum (Plot size: _____)                                    | Absolute % Cover | Dominant Species? | Indicator Status | Footnote:                                                                                                                   |
| 1. _____                                                                 | _____            | _____             | _____            | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.              |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                             |
| 0 = Total Cover                                                          |                  |                   |                  |                                                                                                                             |
| % Bare Ground in Herb Stratum <u>43</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____                                     |
| Remarks:                                                                 |                  |                   |                  |                                                                                                                             |



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 204  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): bottomland Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): C Lat: 38.46297139 Long: -121.1842294 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Within SW-47. Roadside depression                                                                                                                                                                                            |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                                                                                                                                                                                                                                                                                                                                                | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                                                                                                                                                                                                                                                                                                                                       | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                         |
| 2. _____                                                                                                                                                                                                                                                                                                                                                                                       | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                                                                                                                                                                                                                                                                                                                                                                       | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                                                                                                                                                                                                                                                                                                                                                                       | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 0 = Total Cover                                                                                                                                                                                                                                                                                                                                                                                |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>                                                                                                                                                                                                                                                                                                                                                |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                                                                                                                                                                                                                                                                                                                                                                       | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                                                                                                                                                                                                                                                                                                                                                                       | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                                                                                                                                                                                                                                                                                                                                                                       | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                                                                                                                                                                                                                                                                                                                                                                       | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                                                                                                                                                                                                                                                                                                                                                                       | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 0 = Total Cover                                                                                                                                                                                                                                                                                                                                                                                |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Herb Stratum (Plot size: <u>1m<sup>2</sup></u>)</b>                                                                                                                                                                                                                                                                                                                                         |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. <u>Fes. per.</u>                                                                                                                                                                                                                                                                                                                                                                            | <u>60</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 2. <u>Hor. mar.</u>                                                                                                                                                                                                                                                                                                                                                                            | <u>30</u>        | <u>Y</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                                                                                                                                                                                                                                                                                                                                                                       | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                                                                                                                                                                                                                                                                                                                                                                       | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                                                                                                                                                                                                                                                                                                                                                                       | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 6. _____                                                                                                                                                                                                                                                                                                                                                                                       | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 7. _____                                                                                                                                                                                                                                                                                                                                                                                       | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 8. _____                                                                                                                                                                                                                                                                                                                                                                                       | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 90 = Total Cover                                                                                                                                                                                                                                                                                                                                                                               |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Woody Vine Stratum (Plot size: _____)</b>                                                                                                                                                                                                                                                                                                                                                   |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                                                                                                                                                                                                                                                                                                                                                                       | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                                                                                                                                                                                                                                                                                                                                                                       | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 0 = Total Cover                                                                                                                                                                                                                                                                                                                                                                                |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| % Bare Ground in Herb Stratum <u>10</u>                                                                                                                                                                                                                                                                                                                                                        |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.                                                                                                                                                                                                                                                                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____                                                                                                                                                                                                                                                                                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |

Remarks:

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |   |                   |                  |         |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches)                                                                                                      | Matrix        |    | Redox Features |   |                   |                  | Texture | Remarks |
|                                                                                                                     | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |         |
| 0-4                                                                                                                 | 7.5YR 3/1     | 97 | 5YR 4/6        | 3 | C                 | PL               | SiC     |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Indicators for Problematic Hydric Soils <sup>3</sup> :                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5) (LRR C)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR D)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Sandy Mucky Mineral (S1)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Loamy Mucky Mineral (F1)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input checked="" type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Vernal Pools (F9) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR B)<br><input type="checkbox"/> Reduced Vertic (F18)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Other (Explain in Remarks)                                                                                                                                                                                                            |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|                                                                                         |                                                                                                 |
|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Restrictive Layer (if present):</b><br>Type: <u>Clay</u><br>Depth (inches): <u>4</u> | <b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|

Remarks:

**HYDROLOGY**

| Wetland Hydrology Indicators:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Indicators (minimum of one required; check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Secondary Indicators (2 or more required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) (Nonriverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)<br><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)<br><input type="checkbox"/> Surface Soil Cracks (B6)<br><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Other (Explain in Remarks) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <input type="checkbox"/> Water Marks (B1) (Riverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Riverine)<br><input type="checkbox"/> Drift Deposits (B3) (Riverine)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> FAC-Neutral Test (D5)                   |

|                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Field Observations:</b><br>Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ | <b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 205  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): bottomland Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): C Lat: 38.46283246 Long: -121.1829593 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Within VP-14. Microdepression in grassland                                                                                                                                                                                   |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                                                         | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------------------------------------------------------|------------------|----------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                                | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                                                                                                                                                                                                              |
| 2. _____                                                                                | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. _____                                                                                | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                                                                | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 0 = Total Cover                                                                         |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                                                                                                                                      |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>                                         |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. _____                                                                                | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. _____                                                                                | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. _____                                                                                | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 0 = Total Cover                                                                         |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Herb Stratum (Plot size: <u>1m<sup>2</sup></u>)</b>                                  |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. <u>Fes. per.</u>                                                                     | 30               | Y                                | FAC              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. <u>Hor. mar.</u>                                                                     | 25               | Y                                | FAC              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. <u>Ery. cas.</u>                                                                     | 25               | Y                                | OBL              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. _____                                                                                | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. _____                                                                                | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 6. _____                                                                                | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 7. _____                                                                                | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 8. _____                                                                                | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 80 = Total Cover                                                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Woody Vine Stratum (Plot size: _____)</b>                                            |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1. _____                                                                                | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. _____                                                                                | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 0 = Total Cover                                                                         |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| % Bare Ground in Herb Stratum <u>20</u>                                                 |                  | % Cover of Biotic Crust <u>0</u> |                  | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____ |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Remarks:                                                                                |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

**SOIL**

Sampling Point: 205

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix        |    | Redox Features |   |                   |                  | Texture | Remarks |
|----------------|---------------|----|----------------|---|-------------------|------------------|---------|---------|
|                | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |         |
| 0-4            | 7.5YR 3/2     | 95 | 5YR 4/6        | 5 | C                 | M/PL             | SiC     |         |
|                |               |    |                |   |                   |                  |         |         |
|                |               |    |                |   |                   |                  |         |         |
|                |               |    |                |   |                   |                  |         |         |
|                |               |    |                |   |                   |                  |         |         |
|                |               |    |                |   |                   |                  |         |         |
|                |               |    |                |   |                   |                  |         |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: Clay  
 Depth (inches): 4

Hydric Soil Present? Yes  No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (Nonriverine)
- Sediment Deposits (B2) (Nonriverine)
- Drift Deposits (B3) (Nonriverine)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): \_\_\_\_\_

Wetland Hydrology Present? Yes  No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 206  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 0.1  
 Subregion (LRR): C Lat: 38.46285628 Long: -121.1828761 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br><u>Upland point to 205 (VP-14)</u>                                                                                                                                                                                           |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |  |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|--|
| 1. _____                                                                | _____            | _____             | _____            |  |
| 2. _____                                                                | _____            | _____             | _____            |  |
| 3. _____                                                                | _____            | _____             | _____            |  |
| 4. _____                                                                | _____            | _____             | _____            |  |
| 0 = Total Cover                                                         |                  |                   |                  |  |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |  |
| 1. _____                                                                | _____            | _____             | _____            |  |
| 2. _____                                                                | _____            | _____             | _____            |  |
| 3. _____                                                                | _____            | _____             | _____            |  |
| 4. _____                                                                | _____            | _____             | _____            |  |
| 5. _____                                                                | _____            | _____             | _____            |  |
| 0 = Total Cover                                                         |                  |                   |                  |  |
| Herb Stratum (Plot size: <u>1m<sup>2</sup></u> )                        | Absolute % Cover | Dominant Species? | Indicator Status |  |
| 1. <u>Ely. cap.-med.</u>                                                | <u>85</u>        | <u>Y</u>          | <u>UPL</u>       |  |
| 2. <u>Hol. vir.</u>                                                     | <u>5</u>         | <u>N</u>          | <u>UPL</u>       |  |
| 3. <u>Bro. hor.</u>                                                     | <u>10</u>        | <u>N</u>          | <u>FACU</u>      |  |
| 4. _____                                                                | _____            | _____             | _____            |  |
| 5. _____                                                                | _____            | _____             | _____            |  |
| 6. _____                                                                | _____            | _____             | _____            |  |
| 7. _____                                                                | _____            | _____             | _____            |  |
| 8. _____                                                                | _____            | _____             | _____            |  |
| 100 = Total Cover                                                       |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status |  |
| 1. _____                                                                | _____            | _____             | _____            |  |
| 2. _____                                                                | _____            | _____             | _____            |  |
| 0 = Total Cover                                                         |                  |                   |                  |  |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |  |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 3 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 0 x 3 = 0  
 FACU species 10 x 4 = 40  
 UPL species 90 x 5 = 450  
 Column Totals: 100 (A) 490 (B)  
 Prevalence Index = B/A = 4.9

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

Remarks:





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 207  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): bottomland Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): C Lat: 38.46260732 Long: -121.1822996 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Within VP-15. Depression in grassland along fenceline. Grading evident on east side of fence                                                                                                                                 |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                        | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------------------|------------------|----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                               | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                         |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| <u>0</u> = Total Cover                                 |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| <u>0</u> = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Herb Stratum (Plot size: <u>1m<sup>2</sup></u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. <u>Pla. bra.</u>                                    | <u>55</u>        | <u>Y</u>                         | <u>FACW</u>      |                                                                                                                                                                                                                                                                                                                                 |
| 2. <u>Ele. mac.</u>                                    | <u>15</u>        | <u>N</u>                         | <u>OBL</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 3. <u>Fes. per.</u>                                    | <u>15</u>        | <u>N</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 4. <u>Ery. cas.</u>                                    | <u>5</u>         | <u>N</u>                         | <u>OBL</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 6. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 7. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 8. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| <u>90</u> = Total Cover                                |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Woody Vine Stratum (Plot size: _____)</b>           |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| <u>0</u> = Total Cover                                 |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| % Bare Ground in Herb Stratum <u>10</u>                |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                 |
| Remarks:                                               |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 208  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): C Lat: 38.46261606 Long: -121.1823965 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Upland point to 207 (VP-15)                                                                                                                                                                                                  |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                  | Absolute % Cover | Dominant Species?                | Indicator Status |  |
|--------------------------------------------------|------------------|----------------------------------|------------------|--|
| 1. _____                                         | _____            | _____                            | _____            |  |
| 2. _____                                         | _____            | _____                            | _____            |  |
| 3. _____                                         | _____            | _____                            | _____            |  |
| 4. _____                                         | _____            | _____                            | _____            |  |
| 0 = Total Cover                                  |                  |                                  |                  |  |
| Sapling/Shrub Stratum (Plot size: _____)         | Absolute % Cover | Dominant Species?                | Indicator Status |  |
| 1. _____                                         | _____            | _____                            | _____            |  |
| 2. _____                                         | _____            | _____                            | _____            |  |
| 3. _____                                         | _____            | _____                            | _____            |  |
| 4. _____                                         | _____            | _____                            | _____            |  |
| 5. _____                                         | _____            | _____                            | _____            |  |
| 0 = Total Cover                                  |                  |                                  |                  |  |
| Herb Stratum (Plot size: <u>1m<sup>2</sup></u> ) | Absolute % Cover | Dominant Species?                | Indicator Status |  |
| 1. <u>Ely. cap.-med.</u>                         | <u>85</u>        | <u>Y</u>                         | <u>UPL</u>       |  |
| 2. <u>Hol. vir.</u>                              | <u>5</u>         | <u>N</u>                         | <u>UPL</u>       |  |
| 3. <u>Bro. hor.</u>                              | <u>10</u>        | <u>N</u>                         | <u>FACU</u>      |  |
| 4. _____                                         | _____            | _____                            | _____            |  |
| 5. _____                                         | _____            | _____                            | _____            |  |
| 6. _____                                         | _____            | _____                            | _____            |  |
| 7. _____                                         | _____            | _____                            | _____            |  |
| 8. _____                                         | _____            | _____                            | _____            |  |
| 100 = Total Cover                                |                  |                                  |                  |  |
| Woody Vine Stratum (Plot size: _____)            | Absolute % Cover | Dominant Species?                | Indicator Status |  |
| 1. _____                                         | _____            | _____                            | _____            |  |
| 2. _____                                         | _____            | _____                            | _____            |  |
| 0 = Total Cover                                  |                  |                                  |                  |  |
| % Bare Ground in Herb Stratum <u>0</u>           |                  | % Cover of Biotic Crust <u>0</u> |                  |  |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 3 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 0 x 3 = 0  
 FACU species 10 x 4 = 40  
 UPL species 90 x 5 = 450  
 Column Totals: 100 (A) 490 (B)  
 Prevalence Index = B/A = 4.9

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

Remarks:





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 210  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): C Lat: 38.46292486 Long: -121.1822016 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br><u>Upland point to 235 (SW-51)</u>                                                                                                                                                                                           |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |  |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|--|
| 1. _____                                                                | _____            | _____             | _____            |  |
| 2. _____                                                                | _____            | _____             | _____            |  |
| 3. _____                                                                | _____            | _____             | _____            |  |
| 4. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>                         |                  |                   |                  |  |
| 1. _____                                                                | _____            | _____             | _____            |  |
| 2. _____                                                                | _____            | _____             | _____            |  |
| 3. _____                                                                | _____            | _____             | _____            |  |
| 4. _____                                                                | _____            | _____             | _____            |  |
| 5. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| <b>Herb Stratum (Plot size: <u>1m^2</u>)</b>                            |                  |                   |                  |  |
| 1. <u>Ely. cap.-med.</u>                                                | <u>85</u>        | <u>Y</u>          | <u>UPL</u>       |  |
| 2. <u>Hol. vir.</u>                                                     | <u>5</u>         | <u>N</u>          | <u>UPL</u>       |  |
| 3. <u>Bro. hor.</u>                                                     | <u>10</u>        | <u>N</u>          | <u>FACU</u>      |  |
| 4. _____                                                                | _____            | _____             | _____            |  |
| 5. _____                                                                | _____            | _____             | _____            |  |
| 6. _____                                                                | _____            | _____             | _____            |  |
| 7. _____                                                                | _____            | _____             | _____            |  |
| 8. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| <b>Woody Vine Stratum (Plot size: _____)</b>                            |                  |                   |                  |  |
| 1. _____                                                                | _____            | _____             | _____            |  |
| 2. _____                                                                | _____            | _____             | _____            |  |
| _____ = Total Cover                                                     |                  |                   |                  |  |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |  |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 3 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 0 x 3 = 0  
 FACU species 10 x 4 = 40  
 UPL species 90 x 5 = 450  
 Column Totals: 100 (A) 490 (B)  
 Prevalence Index = B/A = 4.9

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

Remarks:



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 215  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): C Lat: 38.46499744 Long: -121.1825792 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br><u>Upland point to 192 (SW-43)</u>                                                                                                                                                                                           |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                          | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------------------------------------------|------------------|-------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                 | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                               |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>                          |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                                                 | _____            | _____             | _____            | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>10</u> x 3 = <u>30</u><br>FACU species <u>70</u> x 4 = <u>280</u><br>UPL species <u>10</u> x 5 = <u>50</u><br>Column Totals: <u>100</u> (A) <u>360</u> (B)<br>Prevalence Index = B/A = <u>3.6</u> |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Herb Stratum (Plot size: <u>1m<sup>2</sup></u>)</b>                   |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| 1. <u>Bro. hor.</u>                                                      | <u>70</u>        | <u>Y</u>          | <u>FACU</u>      | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 2. <u>Bri. min.</u>                                                      | <u>5</u>         | <u>N</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                     |
| 3. <u>Hol. vir.</u>                                                      | <u>10</u>        | <u>N</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. <u>Fes. per.</u>                                                      | <u>5</u>         | <u>N</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                     |
| 5. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 6. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 7. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| 8. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Woody Vine Stratum (Plot size: _____)</b>                             |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| 1. _____                                                                 | _____            | _____             | _____            | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.                                                                                                                                                                                                                                                                      |
| 2. _____                                                                 | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                     |
| _____ = Total Cover                                                      |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| % Bare Ground in Herb Stratum <u>10</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |
| Remarks:                                                                 |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                     |





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 216  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): C Lat: 38.4648828 Long: -121.1828852 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Within SW-44. Feature may be the result of past grading                                                                                                                                                                      |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                        | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------------------|------------------|----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                               | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                         |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 0 = Total Cover                                        |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 0 = Total Cover                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Herb Stratum (Plot size: <u>1m<sup>2</sup></u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. <u>Fes. per.</u>                                    | 55               | Y                                | FAC              |                                                                                                                                                                                                                                                                                                                                 |
| 2. <u>Hor. mar.</u>                                    | 30               | Y                                | FAC              |                                                                                                                                                                                                                                                                                                                                 |
| 3. <u>Ely. cap-med.</u>                                | 5                | N                                | UPL              |                                                                                                                                                                                                                                                                                                                                 |
| 4. <u>Hol. vir.</u>                                    | 5                | N                                | UPL              |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 6. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 7. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 8. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 100 = Total Cover                                      |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Woody Vine Stratum (Plot size: _____)</b>           |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 0 = Total Cover                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| % Bare Ground in Herb Stratum <u>5</u>                 |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                 |

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

Remarks:



## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 217  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): C Lat: 38.46494163 Long: -121.1835089 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br><u>Upland point to 195 (VP-09)</u>                                                                                                                                                                                           |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                              |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>0</u> = Total Cover                                                  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>0</u> x 3 = <u>0</u><br>FACU species <u>40</u> x 4 = <u>160</u><br>UPL species <u>60</u> x 5 = <u>300</u><br>Column Totals: <u>100</u> (A) <u>460</u> (B)<br>Prevalence Index = B/A = <u>4.6</u> |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| Herb Stratum (Plot size: <u>1m<sup>2</sup></u> )                        | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. <u>Bro. hor.</u>                                                     | <u>40</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. <u>Hol. vir.</u>                                                     | <u>20</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. <u>Ely. cap-med.</u>                                                 | <u>40</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>100</u> = Total Cover                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| Remarks:                                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |     |                |   |                   |                  |         |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches)                                                                                                      | Matrix        |     | Redox Features |   |                   |                  | Texture | Remarks |
|                                                                                                                     | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |         |
| 0-2                                                                                                                 | 10YR 3/2      | 100 |                |   |                   |                  | SiC     |         |
|                                                                                                                     |               |     |                |   |                   |                  |         |         |
|                                                                                                                     |               |     |                |   |                   |                  |         |         |
|                                                                                                                     |               |     |                |   |                   |                  |         |         |
|                                                                                                                     |               |     |                |   |                   |                  |         |         |
|                                                                                                                     |               |     |                |   |                   |                  |         |         |
|                                                                                                                     |               |     |                |   |                   |                  |         |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Indicators for Problematic Hydric Soils <sup>3</sup> :                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5) (LRR C)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR D)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Sandy Mucky Mineral (S1)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Loamy Mucky Mineral (F1)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Vernal Pools (F9) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR B)<br><input type="checkbox"/> Reduced Vertic (F18)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Other (Explain in Remarks)                                                                                                                                                                                                 |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|                                                                                            |                                                                                                 |
|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Restrictive Layer (if present):</b><br>Type: <u>Hardpan</u><br>Depth (inches): <u>2</u> | <b>Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|

Remarks:

**HYDROLOGY**

| Wetland Hydrology Indicators:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Indicators (minimum of one required; check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Secondary Indicators (2 or more required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) (Nonriverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)<br><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)<br><input type="checkbox"/> Surface Soil Cracks (B6)<br><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Other (Explain in Remarks) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <input type="checkbox"/> Water Marks (B1) (Riverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Riverine)<br><input type="checkbox"/> Drift Deposits (B3) (Riverine)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> FAC-Neutral Test (D5)        |

|                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Field Observations:</b><br>Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ | <b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 219  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 3  
 Subregion (LRR): C Lat: 38.46557416 Long: -121.1844983 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br><u>Upland point to 197 (VP-12)</u>                                                                                                                                                                                           |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                              |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>0</u> = Total Cover                                                  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>0</u> x 3 = <u>0</u><br>FACU species <u>40</u> x 4 = <u>160</u><br>UPL species <u>60</u> x 5 = <u>300</u><br>Column Totals: <u>100</u> (A) <u>360</u> (B)<br>Prevalence Index = B/A = <u>3.6</u> |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| Herb Stratum (Plot size: <u>1m<sup>2</sup></u> )                        | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. <u>Ely. cap.-med.</u>                                                | <u>40</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. <u>Bro. hor.</u>                                                     | <u>40</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. <u>Hol. vir.</u>                                                     | <u>20</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>100</u> = Total Cover                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

Remarks:



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 221  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 2  
 Subregion (LRR): C Lat: 38.46543805 Long: -121.1854859 Datum: \_\_\_\_\_  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Point taken within "swale" feature previously mapped by SSHCP                                                                                                                                                                |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                              |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>0</u> = Total Cover                                                  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>0</u> x 3 = <u>0</u><br>FACU species <u>40</u> x 4 = <u>160</u><br>UPL species <u>60</u> x 5 = <u>300</u><br>Column Totals: <u>100</u> (A) <u>360</u> (B)<br>Prevalence Index = B/A = <u>3.6</u> |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| Herb Stratum (Plot size: <u>1m<sup>2</sup></u> )                        | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. <u>Ely. cap.-med.</u>                                                | <u>40</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. <u>Bro. hor.</u>                                                     | <u>40</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. <u>Hol. vir.</u>                                                     | <u>20</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>100</u> = Total Cover                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

Remarks:





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 222  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 3  
 Subregion (LRR): C Lat: 38.4640078 Long: -121.1857273 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br><u>Upland point (SW-46)</u>                                                                                                                                                                                                  |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                  | Absolute % Cover | Dominant Species?                | Indicator Status |  |
|--------------------------------------------------|------------------|----------------------------------|------------------|--|
| 1. _____                                         | _____            | _____                            | _____            |  |
| 2. _____                                         | _____            | _____                            | _____            |  |
| 3. _____                                         | _____            | _____                            | _____            |  |
| 4. _____                                         | _____            | _____                            | _____            |  |
| 0 = Total Cover                                  |                  |                                  |                  |  |
| Sapling/Shrub Stratum (Plot size: _____)         |                  |                                  |                  |  |
| 1. _____                                         | _____            | _____                            | _____            |  |
| 2. _____                                         | _____            | _____                            | _____            |  |
| 3. _____                                         | _____            | _____                            | _____            |  |
| 4. _____                                         | _____            | _____                            | _____            |  |
| 5. _____                                         | _____            | _____                            | _____            |  |
| 0 = Total Cover                                  |                  |                                  |                  |  |
| Herb Stratum (Plot size: <u>1m<sup>2</sup></u> ) |                  |                                  |                  |  |
| 1. <u>Ely. cap.-med.</u>                         | <u>40</u>        | <u>Y</u>                         | <u>UPL</u>       |  |
| 2. <u>Bro. hor.</u>                              | <u>40</u>        | <u>Y</u>                         | <u>FACU</u>      |  |
| 3. <u>Hol. vir.</u>                              | <u>20</u>        | <u>Y</u>                         | <u>UPL</u>       |  |
| 4. _____                                         | _____            | _____                            | _____            |  |
| 5. _____                                         | _____            | _____                            | _____            |  |
| 6. _____                                         | _____            | _____                            | _____            |  |
| 7. _____                                         | _____            | _____                            | _____            |  |
| 8. _____                                         | _____            | _____                            | _____            |  |
| 100 = Total Cover                                |                  |                                  |                  |  |
| Woody Vine Stratum (Plot size: _____)            |                  |                                  |                  |  |
| 1. _____                                         | _____            | _____                            | _____            |  |
| 2. _____                                         | _____            | _____                            | _____            |  |
| 0 = Total Cover                                  |                  |                                  |                  |  |
| % Bare Ground in Herb Stratum <u>0</u>           |                  | % Cover of Biotic Crust <u>0</u> |                  |  |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 3 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 0 x 3 = 0  
 FACU species 40 x 4 = 160  
 UPL species 60 x 5 = 300  
 Column Totals: 100 (A) 360 (B)  
 Prevalence Index = B/A = 3.6

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

Remarks:



## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 223  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): C Lat: 38.46302341 Long: -121.1842093 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br><u>Upland point to 204 (SW-47)</u>                                                                                                                                                                                           |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                              |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>0</u> = Total Cover                                                  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>0</u> x 3 = <u>0</u><br>FACU species <u>40</u> x 4 = <u>160</u><br>UPL species <u>60</u> x 5 = <u>300</u><br>Column Totals: <u>100</u> (A) <u>360</u> (B)<br>Prevalence Index = B/A = <u>3.6</u> |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| Herb Stratum (Plot size: <u>1m<sup>2</sup></u> )                        | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. <u>Ely. cap.-med.</u>                                                | <u>40</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. <u>Bro. hor.</u>                                                     | <u>40</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. <u>Hol. vir.</u>                                                     | <u>20</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>100</u> = Total Cover                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

Remarks:





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 224  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): bottomland Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): C Lat: 38.46291586 Long: -121.1840763 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Within SW-48. Microdepression in grassland                                                                                                                                                                                   |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                        | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------|------------------|----------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                               | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                                                                                        |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                        |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Herb Stratum (Plot size: <u>1m<sup>2</sup></u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. <u>Fes. per.</u>                                    | <u>60</u>        | <u>Y</u>                         | <u>FAC</u>       | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 2. <u>Lac. ser.</u>                                    | <u>15</u>        | <u>N</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. <u>Bro. ele.</u>                                    | <u>2</u>         | <u>N</u>                         | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. <u>Hor. mar.</u>                                    | <u>5</u>         | <u>N</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. <u>Con. mac.</u>                                    | <u>5</u>         | <u>N</u>                         | <u>FACW</u>      |                                                                                                                                                                                                                                                                                                                                                                                                |
| 6. <u>Bro. hor.</u>                                    | <u>3</u>         | <u>N</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                |
| 7. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 8. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 90 = Total Cover                                       |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Woody Vine Stratum (Plot size: _____)</b>           |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                               | _____            | _____                            | _____            | <b>Hydrophytic Vegetation Present?</b><br>Yes <input checked="" type="checkbox"/> No _____                                                                                                                                                                                                                                                                                                     |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| % Bare Ground in Herb Stratum <u>10</u>                |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                                                                                |

Remarks:  
 10% unidentifiable thatch



## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 225  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): bottomland Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): C Lat: 38.46295345 Long: -121.1840856 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br><u>Upland point to 224 (SW-48)</u>                                                                                                                                                                                           |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                              |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>0</u> = Total Cover                                                  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>0</u> x 3 = <u>0</u><br>FACU species <u>40</u> x 4 = <u>160</u><br>UPL species <u>60</u> x 5 = <u>300</u><br>Column Totals: <u>100</u> (A) <u>360</u> (B)<br>Prevalence Index = B/A = <u>3.6</u> |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| Herb Stratum (Plot size: <u>1m<sup>2</sup></u> )                        | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. <u>Ely. cap.-med.</u>                                                | <u>40</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. <u>Bro. hor.</u>                                                     | <u>40</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. <u>Hol. vir.</u>                                                     | <u>20</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>100</u> = Total Cover                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                    |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                    |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                    |

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

Remarks:





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 226  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): bottomland Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): C Lat: 38.4630577 Long: -121.1837917 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Within SW-49. Microdepression in grassland                                                                                                                                                                                   |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                          | Absolute % Cover | Dominant Species? | Indicator Status |  |
|--------------------------------------------------------------------------|------------------|-------------------|------------------|--|
| 1. _____                                                                 | _____            | _____             | _____            |  |
| 2. _____                                                                 | _____            | _____             | _____            |  |
| 3. _____                                                                 | _____            | _____             | _____            |  |
| 4. _____                                                                 | _____            | _____             | _____            |  |
| 0 = Total Cover                                                          |                  |                   |                  |  |
| Sapling/Shrub Stratum (Plot size: _____)                                 | Absolute % Cover | Dominant Species? | Indicator Status |  |
| 1. _____                                                                 | _____            | _____             | _____            |  |
| 2. _____                                                                 | _____            | _____             | _____            |  |
| 3. _____                                                                 | _____            | _____             | _____            |  |
| 4. _____                                                                 | _____            | _____             | _____            |  |
| 5. _____                                                                 | _____            | _____             | _____            |  |
| 0 = Total Cover                                                          |                  |                   |                  |  |
| Herb Stratum (Plot size: <u>1m<sup>2</sup></u> )                         | Absolute % Cover | Dominant Species? | Indicator Status |  |
| 1. <u>Fes. per.</u>                                                      | 30               | Y                 | FAC              |  |
| 2. <u>Hor. mar.</u>                                                      | 35               | Y                 | FAC              |  |
| 3. <u>Bro. hor.</u>                                                      | 10               | N                 | FACU             |  |
| 4. <u>Ely. cap-med.</u>                                                  | 5                | N                 | UPL              |  |
| 5. _____                                                                 | _____            | _____             | _____            |  |
| 6. _____                                                                 | _____            | _____             | _____            |  |
| 7. _____                                                                 | _____            | _____             | _____            |  |
| 8. _____                                                                 | _____            | _____             | _____            |  |
| 80 = Total Cover                                                         |                  |                   |                  |  |
| Woody Vine Stratum (Plot size: _____)                                    | Absolute % Cover | Dominant Species? | Indicator Status |  |
| 1. _____                                                                 | _____            | _____             | _____            |  |
| 2. _____                                                                 | _____            | _____             | _____            |  |
| 0 = Total Cover                                                          |                  |                   |                  |  |
| % Bare Ground in Herb Stratum <u>20</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |  |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species \_\_\_\_\_ x 1 = \_\_\_\_\_  
 FACW species \_\_\_\_\_ x 2 = \_\_\_\_\_  
 FAC species \_\_\_\_\_ x 3 = \_\_\_\_\_  
 FACU species \_\_\_\_\_ x 4 = \_\_\_\_\_  
 UPL species \_\_\_\_\_ x 5 = \_\_\_\_\_  
 Column Totals: \_\_\_\_\_ (A) \_\_\_\_\_ (B)  
 Prevalence Index = B/A = \_\_\_\_\_

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No \_\_\_\_\_

Remarks:  
 20% unidentifiable thatch

**SOIL**

Sampling Point: 226

| <b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b> |               |    |                |   |                   |                  |         |         |
|----------------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|---------|---------|
| Depth<br>(inches)                                                                                                          | Matrix        |    | Redox Features |   |                   |                  | Texture | Remarks |
|                                                                                                                            | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |         |
| 0-3                                                                                                                        | 7.5YR 3/2     | 96 | 5YR 4/6        | 4 | C                 | M/PL             | SiC     |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
|                                                                                                                            |               |    |                |   |                   |                  |         |         |
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**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 227  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 0.5  
 Subregion (LRR): C Lat: 38.46307751 Long: -121.183779 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Upland point to 226 (SW-49)                                                                                                                                                                                                  |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                             |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                   |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                   |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                   |
| <u>0</u> = Total Cover                                                  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>5</u> x 3 = <u>15</u><br>FACU species <u>20</u> x 4 = <u>80</u><br>UPL species <u>70</u> x 5 = <u>350</u><br>Column Totals: <u>95</u> (A) <u>445</u> (B)<br>Prevalence Index = B/A = <u>4.7</u> |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                   |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                   |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                   |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                   |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                   |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                   |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                   |
| Herb Stratum (Plot size: <u>1m<sup>2</sup></u> )                        | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                   |
| 1. <u>Ely. cap.-med.</u>                                                | <u>65</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                   |
| 2. <u>Bro. hor.</u>                                                     | <u>20</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                   |
| 3. <u>Ave. bar.</u>                                                     | <u>5</u>         | <u>N</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                   |
| 4. <u>Fes. per.</u>                                                     | <u>5</u>         | <u>N</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                   |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                   |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                   |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                   |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                   |
| <u>95</u> = Total Cover                                                 |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                   |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                   |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                   |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                   |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                   |
| % Bare Ground in Herb Stratum <u>5</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                   |
| Remarks:<br>5% unidentifiable thatch                                    |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                   |





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 228  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 0.5  
 Subregion (LRR): C Lat: 38.46279622 Long: -121.1835065 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Upland point to 229 (SW-50)                                                                                                                                                                                                  |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                                                                 |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>                         |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                                                | _____            | _____             | _____            | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>5</u> x 3 = <u>15</u><br>FACU species <u>20</u> x 4 = <u>80</u><br>UPL species <u>70</u> x 5 = <u>350</u><br>Column Totals: <u>95</u> (A) <u>445</u> (B)<br>Prevalence Index = B/A = <u>4.7</u>                                     |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Herb Stratum (Plot size: <u>1m<sup>2</sup></u>)</b>                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. <u>Ely. cap.-med.</u>                                                | <u>65</u>        | <u>Y</u>          | <u>UPL</u>       | <b>Hydrophytic Vegetation Indicators:</b><br>___ Dominance Test is >50%<br>___ Prevalence Index is ≤3.0 <sup>1</sup><br>___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 2. <u>Bro. hor.</u>                                                     | <u>20</u>        | <u>Y</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. <u>Ave. bar.</u>                                                     | <u>5</u>         | <u>N</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. <u>Fes. per.</u>                                                     | <u>5</u>         | <u>N</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <u>95</u> = Total Cover                                                 |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Woody Vine Stratum (Plot size: _____)</b>                            |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. _____                                                                | _____            | _____             | _____            | <b>Hydrophytic Vegetation Present?</b><br>Yes _____ No <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                            |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| % Bare Ground in Herb Stratum <u>5</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Remarks:<br>5% unidentifiable thatch                                    |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                                                       |



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 229  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): bottomland Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): C Lat: 38.46275597 Long: -121.1835884 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Within SW-50. Microdepression in grassland                                                                                                                                                                                   |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                        | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------|------------------|----------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                               | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                                                                                        |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                        |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Herb Stratum (Plot size: <u>1m<sup>2</sup></u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. <u>Fes. per.</u>                                    | <u>90</u>        | <u>Y</u>                         | <u>FAC</u>       | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 2. <u>Hor. mar.</u>                                    | <u>10</u>        | <u>N</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 6. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 7. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 8. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 100 = Total Cover                                      |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Woody Vine Stratum (Plot size: _____)</b>           |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                               | _____            | _____                            | _____            | <b>Hydrophytic Vegetation Present?</b><br>Yes <input checked="" type="checkbox"/> No _____                                                                                                                                                                                                                                                                                                     |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| % Bare Ground in Herb Stratum <u>0</u>                 |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                                                                                |

Remarks:

**SOIL**

Sampling Point: 229

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |   |                   |                  |         |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches)                                                                                                      | Matrix        |    | Redox Features |   |                   |                  | Texture | Remarks |
|                                                                                                                     | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |         |
| 0-4                                                                                                                 | 7.5YR 3/2     | 95 | 5YR 4/6        | 5 | C                 | M/PL             | SiC     |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Indicators for Problematic Hydric Soils <sup>3</sup> :                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5) (LRR C)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR D)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Sandy Mucky Mineral (S1)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Loamy Mucky Mineral (F1)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input checked="" type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Vernal Pools (F9) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR B)<br><input type="checkbox"/> Reduced Vertic (F18)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Other (Explain in Remarks)                                                                                                                                                                                                            |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|                                                                                         |                                                                                                 |
|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Restrictive Layer (if present):</b><br>Type: <u>Clay</u><br>Depth (inches): <u>4</u> | <b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|

Remarks:

**HYDROLOGY**

| Wetland Hydrology Indicators:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Indicators (minimum of one required; check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Secondary Indicators (2 or more required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) (Nonriverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)<br><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)<br><input type="checkbox"/> Surface Soil Cracks (B6)<br><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Other (Explain in Remarks) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <input type="checkbox"/> Water Marks (B1) (Riverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Riverine)<br><input type="checkbox"/> Drift Deposits (B3) (Riverine)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> FAC-Neutral Test (D5)                   |

|                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Field Observations:</b><br>Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe)    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ | <b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 232  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): bottomland Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): C Lat: 38.46230421 Long: -121.182555 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Within VP-16. Depression in grassland.                                                                                                                                                                                       |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                        | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------|------------------|----------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                               | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                                                                                        |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                        |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____                                                                |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Herb Stratum (Plot size: <u>1m<sup>2</sup></u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. <u>Ele. mac.</u>                                    | <u>50</u>        | <u>Y</u>                         | <u>OBL</u>       | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) |
| 2. <u>Ery. cas.</u>                                    | <u>10</u>        | <u>N</u>                         | <u>OBL</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. <u>Fes. per.</u>                                    | <u>5</u>         | <u>N</u>                         | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. <u>Poa sec.</u>                                     | <u>2</u>         | <u>N</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. <u>Pla. bra.</u>                                    | <u>5</u>         | <u>N</u>                         | <u>FACW</u>      |                                                                                                                                                                                                                                                                                                                                                                                                |
| 6. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 7. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 8. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 72 = Total Cover                                       |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Woody Vine Stratum (Plot size: _____)</b>           |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| 1. _____                                               | _____            | _____                            | _____            | <b>Hydrophytic Vegetation Present?</b><br>Yes <input checked="" type="checkbox"/> No _____                                                                                                                                                                                                                                                                                                     |
| 2. _____                                               | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                |
| 0 = Total Cover                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| % Bare Ground in Herb Stratum <u>28</u>                |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                                                                                |
| Remarks:<br>5% thatch                                  |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                                                                                |

**SOIL**

Sampling Point: 232

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix        |    | Redox Features |   |                   |                  | Texture | Remarks |
|----------------|---------------|----|----------------|---|-------------------|------------------|---------|---------|
|                | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |         |
| 0-4            | 7.5YR 3/2     | 96 | 5YR 4/6        | 4 | C                 | PL               | SiC     |         |
|                |               |    |                |   |                   |                  |         |         |
|                |               |    |                |   |                   |                  |         |         |
|                |               |    |                |   |                   |                  |         |         |
|                |               |    |                |   |                   |                  |         |         |
|                |               |    |                |   |                   |                  |         |         |
|                |               |    |                |   |                   |                  |         |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) **(LRR C)**
- 1 cm Muck (A9) **(LRR D)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) **(LRR C)**
- 2 cm Muck (A10) **(LRR B)**
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: Clay  
 Depth (inches): 4

**Hydric Soil Present?** Yes  No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) **(Nonriverine)**
- Sediment Deposits (B2) **(Nonriverine)**
- Drift Deposits (B3) **(Nonriverine)**
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) **(Riverine)**
- Sediment Deposits (B2) **(Riverine)**
- Drift Deposits (B3) **(Riverine)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Saturation Present? (includes capillary fringe) Yes  No  Depth (inches): \_\_\_\_\_

**Wetland Hydrology Present?** Yes  No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 233  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): C Lat: 38.46231742 Long: -121.1827039 Datum: \_\_\_\_\_  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Upland point to 232 (VP-16)                                                                                                                                                                                                  |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                                                                             |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                   |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                   |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                   |
| <u>0</u> = Total Cover                                                  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species <u>0</u> x 1 = <u>0</u><br>FACW species <u>0</u> x 2 = <u>0</u><br>FAC species <u>0</u> x 3 = <u>0</u><br>FACU species <u>10</u> x 4 = <u>40</u><br>UPL species <u>90</u> x 5 = <u>450</u><br>Column Totals: <u>100</u> (A) <u>490</u> (B)<br>Prevalence Index = B/A = <u>4.9</u> |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                   |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                   |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                   |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                   |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                   |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                   |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                   |
| Herb Stratum (Plot size: <u>1m<sup>2</sup></u> )                        | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                   |
| 1. <u>Ely. cap.-med.</u>                                                | <u>85</u>        | <u>Y</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                   |
| 2. <u>Hol. vir.</u>                                                     | <u>5</u>         | <u>N</u>          | <u>UPL</u>       |                                                                                                                                                                                                                                                                                                                                                                                   |
| 3. <u>Bro. hor.</u>                                                     | <u>10</u>        | <u>N</u>          | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                                                                   |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                   |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                   |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                   |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                   |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                   |
| <u>100</u> = Total Cover                                                |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                   |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                   |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                   |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                                                                   |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                   |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                                                                   |

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

Remarks:





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 234  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 0  
 Subregion (LRR): C Lat: 38.46695412 Long: -121.1854545 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br>Point taken within feature previously mapped by SSHCP                                                                                                                                                                        |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                  | Absolute % Cover | Dominant Species?                | Indicator Status |  |
|--------------------------------------------------|------------------|----------------------------------|------------------|--|
| 1. _____                                         | _____            | _____                            | _____            |  |
| 2. _____                                         | _____            | _____                            | _____            |  |
| 3. _____                                         | _____            | _____                            | _____            |  |
| 4. _____                                         | _____            | _____                            | _____            |  |
| 0 = Total Cover                                  |                  |                                  |                  |  |
| Sapling/Shrub Stratum (Plot size: _____)         |                  |                                  |                  |  |
| 1. _____                                         | _____            | _____                            | _____            |  |
| 2. _____                                         | _____            | _____                            | _____            |  |
| 3. _____                                         | _____            | _____                            | _____            |  |
| 4. _____                                         | _____            | _____                            | _____            |  |
| 5. _____                                         | _____            | _____                            | _____            |  |
| 0 = Total Cover                                  |                  |                                  |                  |  |
| Herb Stratum (Plot size: <u>1m<sup>2</sup></u> ) |                  |                                  |                  |  |
| 1. <u>Ely. cap.-med.</u>                         | 40               | Y                                | UPL              |  |
| 2. <u>Bro. hor.</u>                              | 40               | Y                                | FACU             |  |
| 3. <u>Hol. vir.</u>                              | 20               | Y                                | UPL              |  |
| 4. _____                                         | _____            | _____                            | _____            |  |
| 5. _____                                         | _____            | _____                            | _____            |  |
| 6. _____                                         | _____            | _____                            | _____            |  |
| 7. _____                                         | _____            | _____                            | _____            |  |
| 8. _____                                         | _____            | _____                            | _____            |  |
| 100 = Total Cover                                |                  |                                  |                  |  |
| Woody Vine Stratum (Plot size: _____)            |                  |                                  |                  |  |
| 1. _____                                         | _____            | _____                            | _____            |  |
| 2. _____                                         | _____            | _____                            | _____            |  |
| 0 = Total Cover                                  |                  |                                  |                  |  |
| % Bare Ground in Herb Stratum <u>0</u>           |                  | % Cover of Biotic Crust <u>0</u> |                  |  |

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 3 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 0 x 3 = 0  
 FACU species 40 x 4 = 160  
 UPL species 60 x 5 = 300  
 Column Totals: 100 (A) 360 (B)  
 Prevalence Index = B/A = 3.6

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No

Remarks:



## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 235  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): bottomland Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): C Lat: 38.46288681 Long: -121.1820348 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>Within SW-51. Depression in grassland.                                                                                                                                                                                       |                                                                                                  |

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: _____)                                         | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------|------------------|-------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                                                | _____            | _____             | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)                                                                         |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| <u>0</u> = Total Cover                                                  |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| Sapling/Shrub Stratum (Plot size: _____)                                | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                 |
| Herb Stratum (Plot size: <u>1m<sup>2</sup></u> )                        | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
| 1. <u>Fes. per.</u>                                                     | <u>45</u>        | <u>Y</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 2. <u>Hor. mar.</u>                                                     | <u>50</u>        | <u>Y</u>          | <u>FAC</u>       |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 6. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 7. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 8. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| <u>95</u> = Total Cover                                                 |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                 |
| Woody Vine Stratum (Plot size: _____)                                   | Absolute % Cover | Dominant Species? | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                                                | _____            | _____             | _____            |                                                                                                                                                                                                                                                                                                                                 |
| <u>0</u> = Total Cover                                                  |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                 |
| % Bare Ground in Herb Stratum <u>5</u> % Cover of Biotic Crust <u>0</u> |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                 |
| Remarks:<br>5% thatch                                                   |                  |                   |                  |                                                                                                                                                                                                                                                                                                                                 |

**SOIL**

Sampling Point: 235

| Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) |               |    |                |   |                   |                  |         |         |
|---------------------------------------------------------------------------------------------------------------------|---------------|----|----------------|---|-------------------|------------------|---------|---------|
| Depth (inches)                                                                                                      | Matrix        |    | Redox Features |   |                   |                  | Texture | Remarks |
|                                                                                                                     | Color (moist) | %  | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |         |
| 0-4                                                                                                                 | 7.5YR 3/1     | 96 | 5YR 4/6        | 4 | C                 | M/PL             | SiC     |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |
|                                                                                                                     |               |    |                |   |                   |                  |         |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Indicators for Problematic Hydric Soils <sup>3</sup> :                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Black Histic (A3)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Stratified Layers (A5) (LRR C)<br><input type="checkbox"/> 1 cm Muck (A9) (LRR D)<br><input type="checkbox"/> Depleted Below Dark Surface (A11)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input type="checkbox"/> Sandy Mucky Mineral (S1)<br><input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Sandy Redox (S5)<br><input type="checkbox"/> Stripped Matrix (S6)<br><input type="checkbox"/> Loamy Mucky Mineral (F1)<br><input type="checkbox"/> Loamy Gleyed Matrix (F2)<br><input type="checkbox"/> Depleted Matrix (F3)<br><input checked="" type="checkbox"/> Redox Dark Surface (F6)<br><input type="checkbox"/> Depleted Dark Surface (F7)<br><input type="checkbox"/> Redox Depressions (F8)<br><input type="checkbox"/> Vernal Pools (F9) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> 1 cm Muck (A9) (LRR C)<br><input type="checkbox"/> 2 cm Muck (A10) (LRR B)<br><input type="checkbox"/> Reduced Vertic (F18)<br><input type="checkbox"/> Red Parent Material (TF2)<br><input type="checkbox"/> Other (Explain in Remarks)                                                                                                                                                                                                            |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

|                                                                                         |                                                                                                 |
|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <b>Restrictive Layer (if present):</b><br>Type: <u>Clay</u><br>Depth (inches): <u>4</u> | <b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|

Remarks:

**HYDROLOGY**

| Wetland Hydrology Indicators:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Indicators (minimum of one required; check all that apply)                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Secondary Indicators (2 or more required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1) (Nonriverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)<br><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)<br><input type="checkbox"/> Surface Soil Cracks (B6)<br><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)<br><input type="checkbox"/> Biotic Crust (B12)<br><input type="checkbox"/> Aquatic Invertebrates (B13)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Thin Muck Surface (C7)<br><input type="checkbox"/> Other (Explain in Remarks) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <input type="checkbox"/> Water Marks (B1) (Riverine)<br><input type="checkbox"/> Sediment Deposits (B2) (Riverine)<br><input type="checkbox"/> Drift Deposits (B3) (Riverine)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> FAC-Neutral Test (D5)                   |

|                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Field Observations:</b><br>Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? (includes capillary fringe)    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ | <b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: SSEP City/County: Sacramento County Sampling Date: 11/13/2020  
 Applicant/Owner: \_\_\_\_\_ State: CA Sampling Point: 238  
 Investigator(s): LB, AG Section, Township, Range: Township 7N / Range 7E / Section 14  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR): C Lat: 38.46552228 Long: -121.1848593 Datum: WGS84  
 Soil Map Unit Name: Hadselville-Pentz complex, 2 - 30% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                          |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes _____ No <input checked="" type="checkbox"/> |
| Remarks:<br><u>Upland point to 198 (VP-13)</u>                                                                                                                                                                                           |                                                                                                  |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                                                                                                                                                                                                           | Absolute % Cover | Dominant Species? | Indicator Status |                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-------------------|------------------|----------------|
| 1. _____                                                                                                                                                                                                                                  | _____            | _____             | _____            |                |
| 2. _____                                                                                                                                                                                                                                  | _____            | _____             | _____            |                |
| 3. _____                                                                                                                                                                                                                                  | _____            | _____             | _____            |                |
| 4. _____                                                                                                                                                                                                                                  | _____            | _____             | _____            |                |
| _____ = Total Cover                                                                                                                                                                                                                       |                  |                   |                  |                |
| <b>Dominance Test worksheet:</b>                                                                                                                                                                                                          |                  |                   |                  |                |
| Number of Dominant Species That Are OBL, FACW, or FAC:                                                                                                                                                                                    |                  |                   |                  | <u>0</u> (A)   |
| Total Number of Dominant Species Across All Strata:                                                                                                                                                                                       |                  |                   |                  | <u>3</u> (B)   |
| Percent of Dominant Species That Are OBL, FACW, or FAC:                                                                                                                                                                                   |                  |                   |                  | <u>0</u> (A/B) |
| <b>Prevalence Index worksheet:</b>                                                                                                                                                                                                        |                  |                   |                  |                |
| Total % Cover of:                                                                                                                                                                                                                         |                  | Multiply by:      |                  |                |
| OBL species                                                                                                                                                                                                                               | <u>0</u>         | x 1 =             | <u>0</u>         |                |
| FACW species                                                                                                                                                                                                                              | <u>0</u>         | x 2 =             | <u>0</u>         |                |
| FAC species                                                                                                                                                                                                                               | <u>0</u>         | x 3 =             | <u>0</u>         |                |
| FACU species                                                                                                                                                                                                                              | <u>40</u>        | x 4 =             | <u>160</u>       |                |
| UPL species                                                                                                                                                                                                                               | <u>60</u>        | x 5 =             | <u>300</u>       |                |
| Column Totals:                                                                                                                                                                                                                            | <u>100</u>       | (A)               | <u>360</u>       | (B)            |
| Prevalence Index = B/A =                                                                                                                                                                                                                  |                  |                   |                  | <u>3.6</u>     |
| <b>Hydrophytic Vegetation Indicators:</b>                                                                                                                                                                                                 |                  |                   |                  |                |
| ___ Dominance Test is >50%                                                                                                                                                                                                                |                  |                   |                  |                |
| ___ Prevalence Index is ≤3.0 <sup>1</sup>                                                                                                                                                                                                 |                  |                   |                  |                |
| ___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)                                                                                                                                    |                  |                   |                  |                |
| ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)                                                                                                                                                                             |                  |                   |                  |                |
| <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.                                                                                                                            |                  |                   |                  |                |
| <b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>                                                                                                                                                   |                  |                   |                  |                |
| Sapling/Shrub Stratum (Plot size: _____)<br>1. _____<br>2. _____<br>3. _____<br>4. _____<br>5. _____<br>_____ = Total Cover                                                                                                               |                  |                   |                  |                |
| Herb Stratum (Plot size: <u>1m<sup>2</sup></u> )<br>1. <u>Ely. cap.-med.</u> 40 Y UPL<br>2. <u>Bro. hor.</u> 40 Y FACU<br>3. <u>Hol. vir.</u> 20 Y UPL<br>4. _____<br>5. _____<br>6. _____<br>7. _____<br>8. _____<br>_____ = Total Cover |                  |                   |                  |                |
| Woody Vine Stratum (Plot size: _____)<br>1. _____<br>2. _____<br>_____ = Total Cover                                                                                                                                                      |                  |                   |                  |                |
| % Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u>                                                                                                                                                                   |                  |                   |                  |                |
| Remarks:                                                                                                                                                                                                                                  |                  |                   |                  |                |



**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 11/9/2020  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: 239  
 Investigator(s): Allie Sennett, Adam Crawford Section, Township, Range: Township 7N / Range 7E / Section 03  
 Landform (hillslope, terrace, etc.): Flatlands Local relief (concave, convex, none): Flat Slope (%): 0  
 Subregion (LRR): C Lat: 38.48213174 Long: -121.1905915 Datum: WGS84  
 Soil Map Unit Name: Reiff fine sandy loam, 0 - 2% slopes, occasionally flooded NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:<br>Cultivated field in northern extent of site.                                                                                                                                                                                                                                          |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                   | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                           |
|---------------------------------------------------|------------------|----------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                          | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)<br><br>Total Number of Dominant Species Across All Strata: _____ (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)                                                                                      |
| 2. _____                                          | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 3. _____                                          | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 4. _____                                          | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| _____ = Total Cover                               |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>_____ Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b>   |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                           |
| 1. _____                                          | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 2. _____                                          | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 3. _____                                          | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 4. _____                                          | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 5. _____                                          | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| _____ = Total Cover                               |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                           |
| <b>Herb Stratum (Plot size: <u>5 m x 5 m</u>)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                           |
| 1. <u>Eragrostis mexicana</u>                     | <u>3</u>         | <u>N</u>                         | <u>FACU</u>      |                                                                                                                                                                                                                                                                                                                                           |
| 2. <u>Convolvulus arvensis</u>                    | <u>2</u>         | <u>N</u>                         | <u>NL</u>        |                                                                                                                                                                                                                                                                                                                                           |
| 3. _____                                          | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 4. _____                                          | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 5. _____                                          | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 6. _____                                          | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 7. _____                                          | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 8. _____                                          | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| _____ = Total Cover                               |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                           |
| <b>Woody Vine Stratum (Plot size: _____)</b>      |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                           |
| 1. _____                                          | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| 2. _____                                          | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                           |
| _____ = Total Cover                               |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                           |
| % Bare Ground in Herb Stratum <u>95</u>           |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                           |

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

Remarks:  
 Area is disked vegetation removed from agricultural activities.





**WETLAND DETERMINATION DATA FORM – Arid West Region**

Project/Site: Sloughhouse Solar Energy Project City/County: Sacramento County Sampling Date: 3/3/2021  
 Applicant/Owner: D.E. Shaw Renewable Investments State: CA Sampling Point: D-03 / D-04  
 Investigator(s): A. Godinho Section, Township, Range: Township 7N / Range 7E / Section 03  
 Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR): C Lat: 38.467164 Long: -121.175458 Datum: WGS84  
 Soil Map Unit Name: San Joaquin-Galt Complex, 0-3% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|                                                                                                                                                                                                                                                                                                   |                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Remarks:                                                                                                                                                                                                                                                                                          |                                                                                                                     |

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: _____)                 | Absolute % Cover | Dominant Species?                | Indicator Status |                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------|------------------|----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. _____                                        | _____            | _____                            | _____            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)                                                                           |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| <u>0</u> = Total Cover                          |                  |                                  |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br>Prevalence Index = B/A = _____ |
| <b>Sapling/Shrub Stratum (Plot size: _____)</b> |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| <u>0</u> = Total Cover                          |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Herb Stratum (Plot size: <u>1x1m</u>)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. <u>Bromus diandrus</u>                       | <u>10</u>        | <u>Y</u>                         | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. <u>Avena fatua</u>                           | <u>10</u>        | <u>Y</u>                         | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 3. <u>Elymus caput-medusae</u>                  | <u>10</u>        | <u>Y</u>                         | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 4. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 5. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 6. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 7. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 8. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| <u>30</u> = Total Cover                         |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| <b>Woody Vine Stratum (Plot size: _____)</b>    |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| 1. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| 2. _____                                        | _____            | _____                            | _____            |                                                                                                                                                                                                                                                                                                                                 |
| <u>0</u> = Total Cover                          |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |
| % Bare Ground in Herb Stratum <u>60</u>         |                  | % Cover of Biotic Crust <u>0</u> |                  |                                                                                                                                                                                                                                                                                                                                 |
| Remarks:                                        |                  |                                  |                  |                                                                                                                                                                                                                                                                                                                                 |

**SOIL**

Sampling Point: D-03 / D-04

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix        |    | Redox Features |    |                   |                  | Texture | Remarks         |
|----------------|---------------|----|----------------|----|-------------------|------------------|---------|-----------------|
|                | Color (moist) | %  | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |         |                 |
| 0-12           | 10YR 2/2      | 40 | 2.5YR 4/6      | 60 | C                 | M                | SiL     | contains gravel |
|                |               |    |                |    |                   |                  |         |                 |
|                |               |    |                |    |                   |                  |         |                 |
|                |               |    |                |    |                   |                  |         |                 |
|                |               |    |                |    |                   |                  |         |                 |
|                |               |    |                |    |                   |                  |         |                 |
|                |               |    |                |    |                   |                  |         |                 |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) **(LRR C)**
- 1 cm Muck (A9) **(LRR D)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) **(LRR C)**
- 2 cm Muck (A10) **(LRR B)**
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: None  
 Depth (inches): n/a

**Hydric Soil Present? Yes  No**

Remarks:

Soil pit taken within eastern drainage ditch at the culvert outlet under Dillard Road

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) **(Nonriverine)**
- Sediment Deposits (B2) **(Nonriverine)**
- Drift Deposits (B3) **(Nonriverine)**
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) **(Riverine)**
- Sediment Deposits (B2) **(Riverine)**
- Drift Deposits (B3) **(Riverine)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Saturation Present? Yes  No  Depth (inches): 4  
 (includes capillary fringe)

**Wetland Hydrology Present? Yes  No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

OHWM DATA SHEET

Project: SSEP

Date: 10/30/20

Transect: X 62

Investigator(s): AG + LB

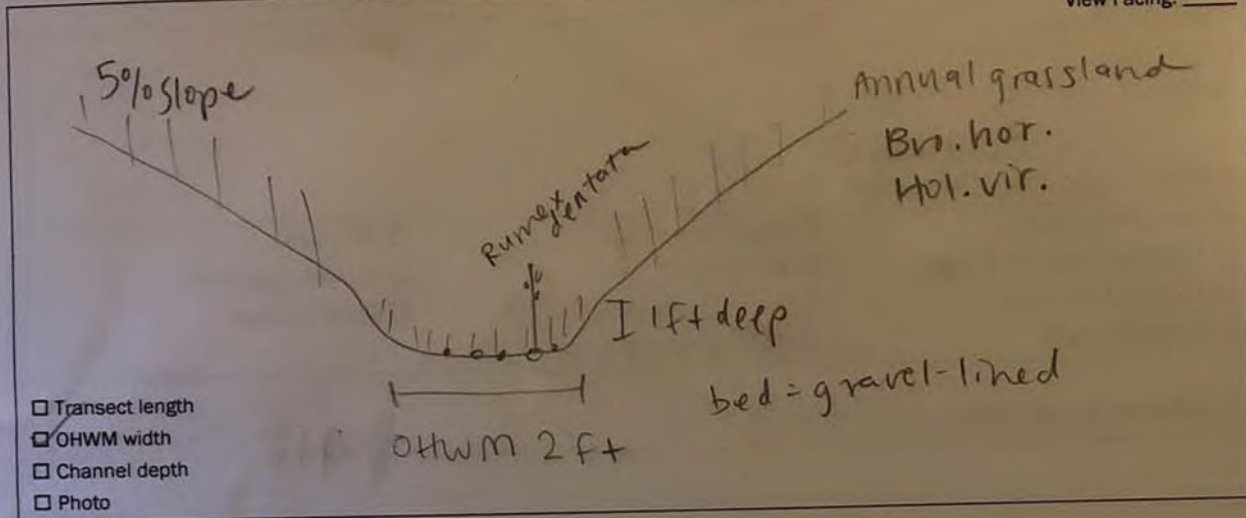
Feature Name: ED-01

Site Location:

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):

View Facing: \_\_\_\_\_



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

|                                                                  |                                                               |
|------------------------------------------------------------------|---------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank      | <input checked="" type="checkbox"/> Sediment sorting          |
| <input type="checkbox"/> Shelving                                | <input type="checkbox"/> Leaf litter disturbed or washed away |
| <input type="checkbox"/> Changes in the character of soil        | <input type="checkbox"/> Scour                                |
| <input type="checkbox"/> Destruction of terrestrial vegetation   | <input type="checkbox"/> Deposition                           |
| <input type="checkbox"/> Presence of litter and debris           | <input type="checkbox"/> Bed and banks                        |
| <input type="checkbox"/> Wracking                                | <input type="checkbox"/> Water staining                       |
| <input type="checkbox"/> Vegetation matted down, bent, or absent | <input checked="" type="checkbox"/> Change in plant community |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM | 100       | 0    | 0      | 0       | 0        |
| Below OHWM | 90        | 0    | 10     | 0       | 0        |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM | 0        | 0         | 100      | 0        |
| Below OHWM | 0        | 0         | 50       | 50       |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

| Upland Species:       | Bank Species:          | Emergent Species: |
|-----------------------|------------------------|-------------------|
| Br. hor.<br>Hol. vir. | Hor. mar.<br>Fes. per. | Rum. den.         |



# OHWM DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

## Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Min. depth:

Temp:

Max. depth:

## Checklist of resources (if available):

- Aerial photography
- Remotely-sensed images
- Topographic maps
- Geologic maps

- Vegetation maps
- Soil maps
- Rainfall/precipitation data
- Existing delineation(s) for site

- GPS unit
- Stream gage data
- Other studies:

## Other drawings (plan view), notes:

Other forms related to this feature:  Yes  No

~~ED-01-72~~

ED-01-75

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)



63 + 76

Project: SSEP Date: 10/30/20 OTHM DATA SHEET

Transect: T1-2

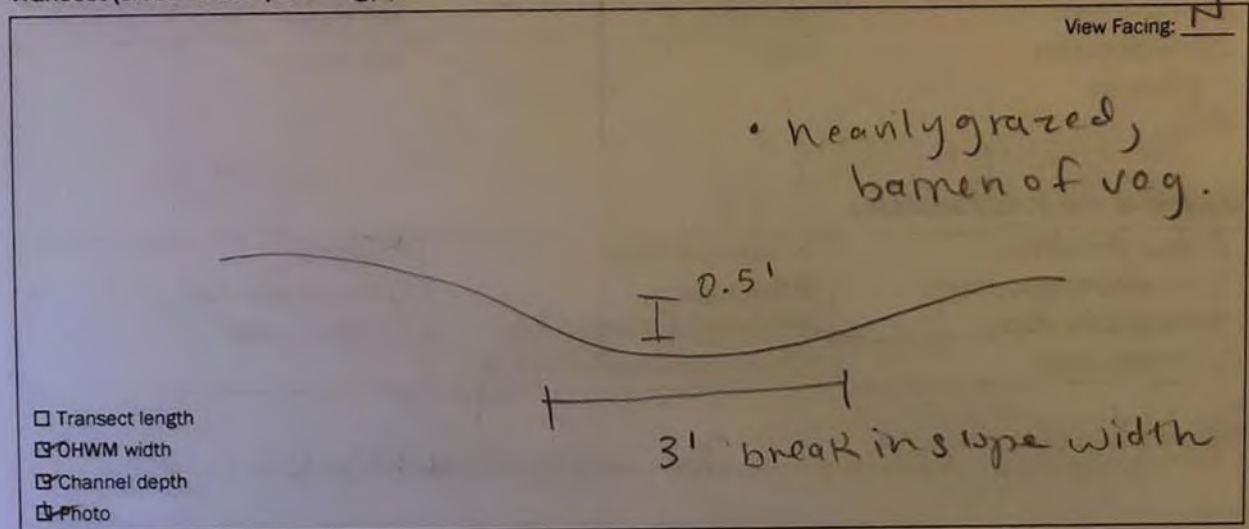
Investigator(s): LB, AG

Feature Name: US-08

Site Location: centrally located near cattle troughs, within feature previously mapped by SSEP

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

|                                                                  |                                                                            |
|------------------------------------------------------------------|----------------------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank      | <input type="checkbox"/> Sediment sorting                                  |
| <input type="checkbox"/> Shelving                                | <input type="checkbox"/> Leaf litter disturbed or washed away              |
| <input type="checkbox"/> Changes in the character of soil        | <input type="checkbox"/> Scour                                             |
| <input type="checkbox"/> Destruction of terrestrial vegetation   | <input type="checkbox"/> Deposition                                        |
| <input type="checkbox"/> Presence of litter and debris           | <input type="checkbox"/> Bed and banks                                     |
| <input type="checkbox"/> Wracking                                | <input type="checkbox"/> Water staining                                    |
| <input type="checkbox"/> Vegetation matted down, bent, or absent | <input checked="" type="checkbox"/> Change in plant community and/or cover |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM |           |      |        |         |          |
| Below OHWM | 100       | ○    | ○      | ○       | ○        |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM |          |           |          |          |
| Below OHWM | ○        | ○         | ○        | 100      |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

|                               |                                                                                                                                                     |                                 |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| <p><b>Upland Species:</b></p> | <p><b>Bank Species:</b></p> <ul style="list-style-type: none"> <li>• Bro hor</li> <li>• Elycep-med</li> <li>• Fes per</li> <li>• Hor mar</li> </ul> | <p><b>Emergent Species:</b></p> |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|

OHWB DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

heavy grazing + cattle traffic

Hydrology:

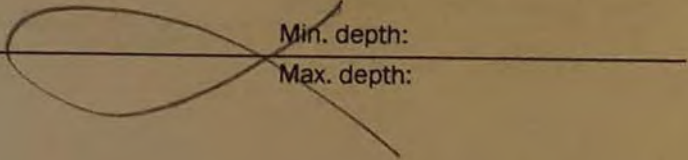
- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Min. depth:

Temp:

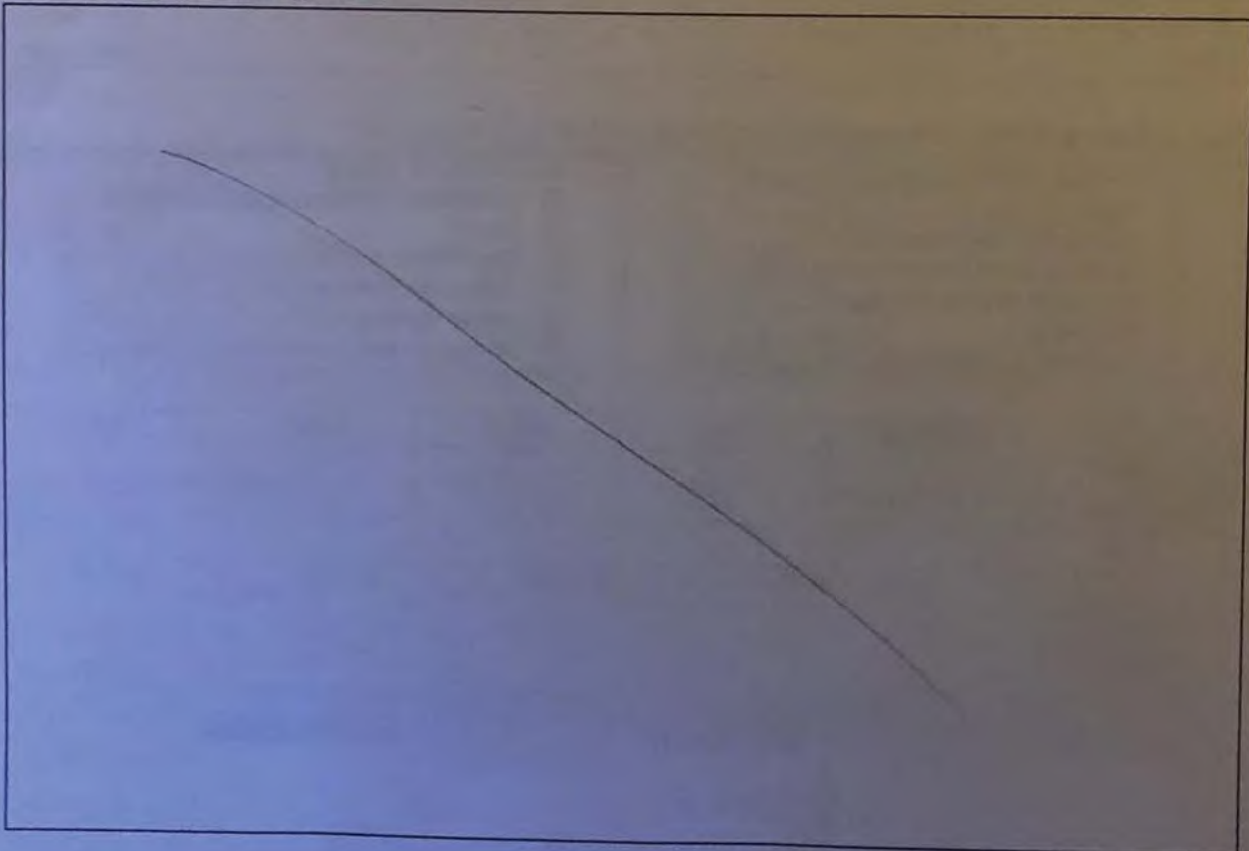
Max. depth:



Checklist of resources (if available):

|                                                        |                                                                      |                                              |
|--------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography | <input type="checkbox"/> Vegetation maps                             | <input checked="" type="checkbox"/> GPS unit |
| <input type="checkbox"/> Remotely-sensed images        | <input checked="" type="checkbox"/> Soil maps                        | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps   | <input type="checkbox"/> Rainfall/precipitation data                 | <input type="checkbox"/> Other studies:      |
| <input type="checkbox"/> Geologic maps                 | <input checked="" type="checkbox"/> Existing delineation(s) for site |                                              |

Other drawings (plan view), notes:



Other forms related to this feature:  Yes  No

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)



OHWM DATA SHEET

Project: SSEP Date: 10/30/20

Transect: 275

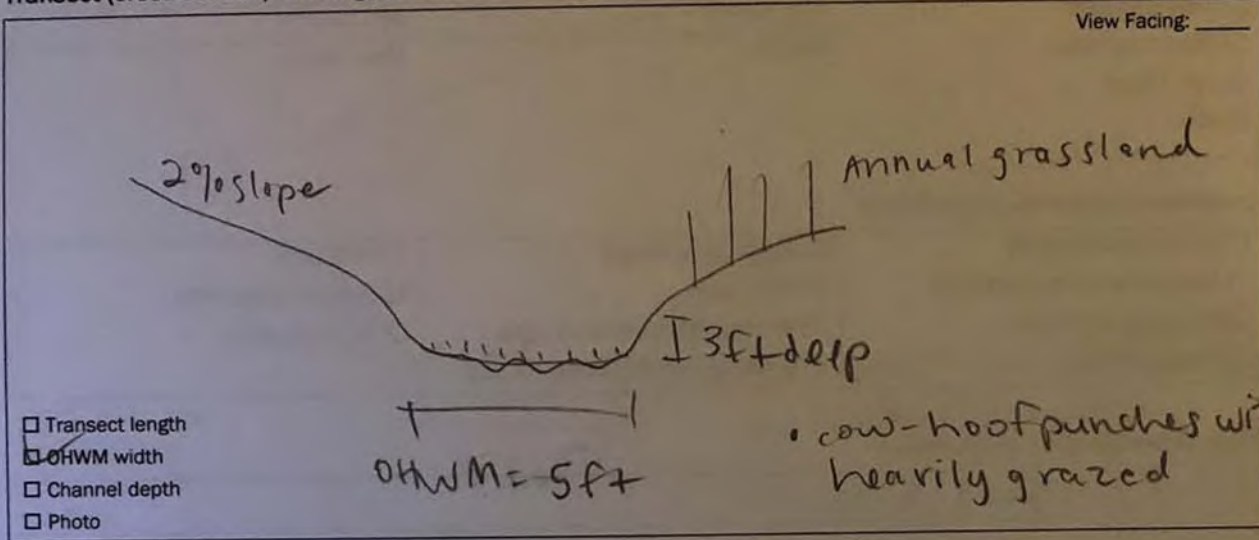
Investigator(s): AG + LB

Feature Name: ED-01

Site Location:

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

- |                                                                      |                                                               |
|----------------------------------------------------------------------|---------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank          | <input type="checkbox"/> Sediment sorting                     |
| <input type="checkbox"/> Shelving                                    | <input type="checkbox"/> Leaf litter disturbed or washed away |
| <input checked="" type="checkbox"/> Changes in the character of soil | <input type="checkbox"/> Scour                                |
| <input type="checkbox"/> Destruction of terrestrial vegetation       | <input type="checkbox"/> Deposition                           |
| <input type="checkbox"/> Presence of litter and debris               | <input type="checkbox"/> Bed and banks                        |
| <input type="checkbox"/> Wracking                                    | <input type="checkbox"/> Water staining                       |
| <input type="checkbox"/> Vegetation matted down, bent, or absent     | <input checked="" type="checkbox"/> Change in plant community |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM | 100       | ○    | ○      | ○       | ○        |
| Below OHWM |           |      |        |         |          |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM | ○        | ○         | 100      | 0        |
| Below OHWM |          |           | 50       | 50       |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

|                                                                                                                              |                             |                                                                                               |
|------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-----------------------------------------------------------------------------------------------|
| <p><b>Upland Species:</b><br/>                 Bro. hor.<br/>                 Hol. vir.<br/>                 Ely cap-med</p> | <p><b>Bank Species:</b></p> | <p><b>Emergent Species:</b><br/>                 Hor. mar.<br/>                 Fes. per.</p> |
|------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-----------------------------------------------------------------------------------------------|

OHWM DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

heavily grazed, cow-punches

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Min. depth:

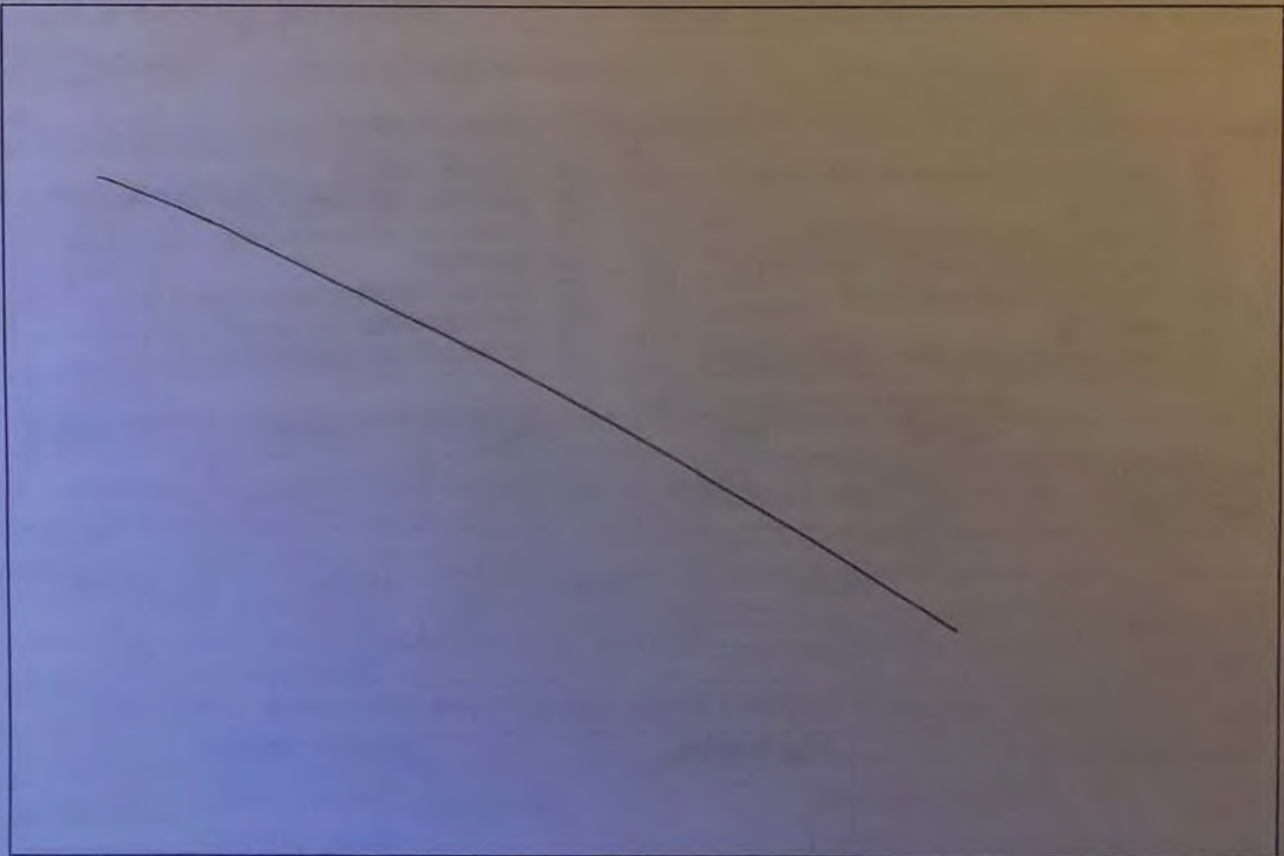
Temp:

Max. depth:

Checklist of resources (if available):

|                                                        |                                                                      |                                              |
|--------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography | <input type="checkbox"/> Vegetation maps                             | <input checked="" type="checkbox"/> GPS unit |
| <input type="checkbox"/> Remotely-sensed images        | <input checked="" type="checkbox"/> Soil maps                        | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps   | <input type="checkbox"/> Rainfall/precipitation data                 | <input type="checkbox"/> Other studies:      |
| <input type="checkbox"/> Geologic maps                 | <input checked="" type="checkbox"/> Existing delineation(s) for site |                                              |

Other drawings (plan view), notes:



Other forms related to this feature:  Yes  No

ED-01-T1

ED-01-65

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)



OHWM DATA SHEET

Project: SSEP Date: 10/30/20

ED-02-64

Investigator(s): AG+LB

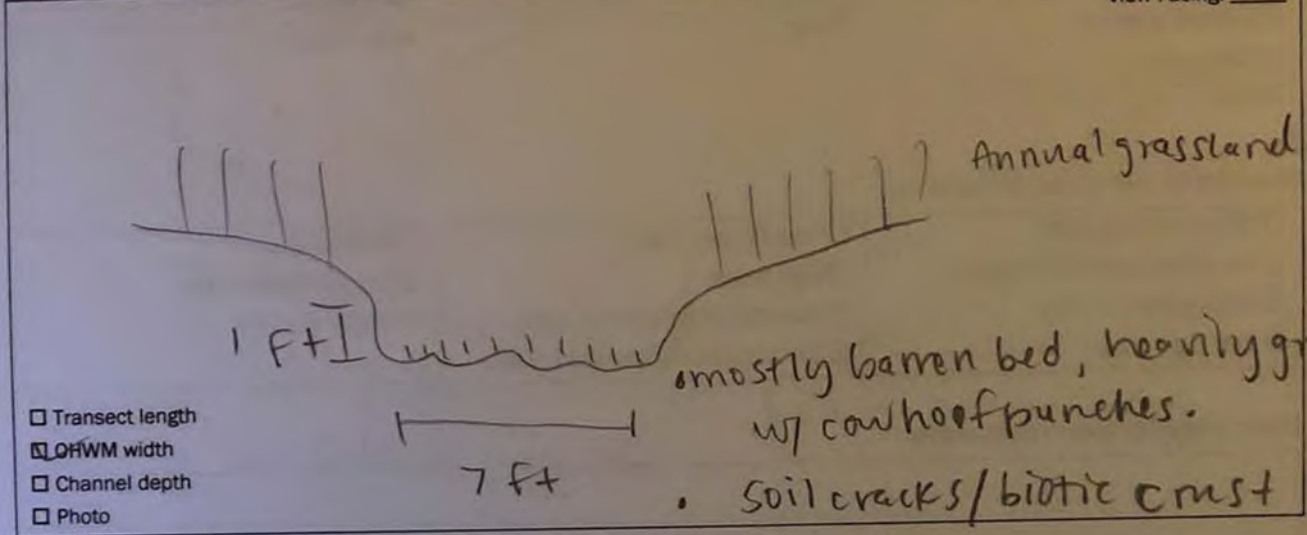
Feature Name:

Site Location:

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):

View Facing: E



- Transect length
- OHWM width
- Channel depth
- Photo

Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

- |                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank<br><input type="checkbox"/> Shelving<br><input type="checkbox"/> Changes in the character of soil<br><input type="checkbox"/> Destruction of terrestrial vegetation<br><input type="checkbox"/> Presence of litter and debris<br><input type="checkbox"/> Wracking<br><input checked="" type="checkbox"/> Vegetation matted down, bent, or absent | <input type="checkbox"/> Sediment sorting<br><input type="checkbox"/> Leaf litter disturbed or washed away<br><input type="checkbox"/> Scour<br><input type="checkbox"/> Deposition<br><input checked="" type="checkbox"/> Bed and banks<br><input type="checkbox"/> Water staining<br><input checked="" type="checkbox"/> Change in plant community |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM | 100       | 0    | 0      | 0       | 0        |
| Below OHWM |           |      |        |         |          |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM | 0        | 0         | 100      | 0        |
| Below OHWM |          |           | 50       | 50       |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

| Upland Species:                      | Bank Species: | Emergent Species: |
|--------------------------------------|---------------|-------------------|
| Bro. hor.<br>Fly capped<br>Hol. vir. | <del>Ø</del>  | Hor. mar.         |

OHWB DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

cattle traffic/grazing

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Min. depth:

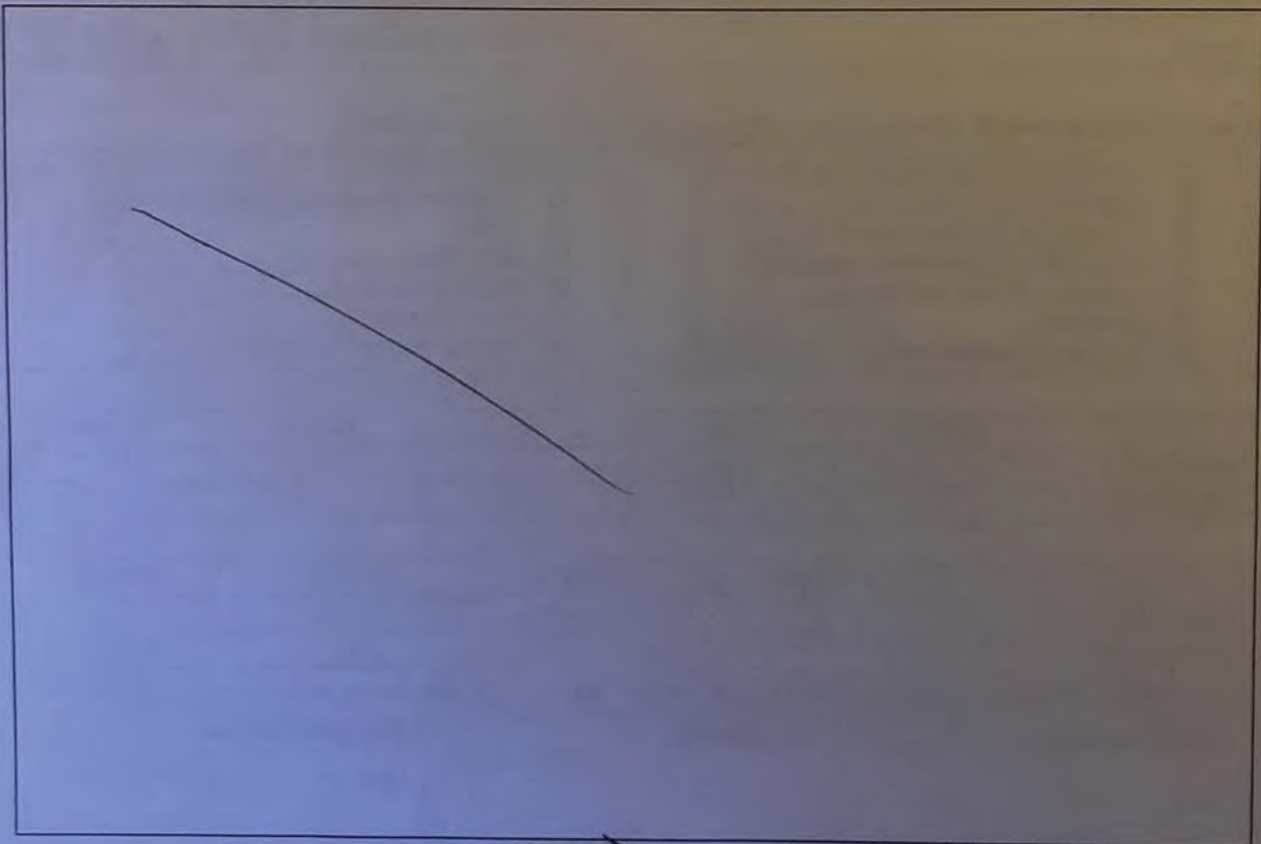
Temp:

Max. depth:

Checklist of resources (if available):

|                                                        |                                                                      |                                              |
|--------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography | <input type="checkbox"/> Vegetation maps                             | <input checked="" type="checkbox"/> GPS unit |
| <input type="checkbox"/> Remotely-sensed images        | <input checked="" type="checkbox"/> Soil maps                        | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps   | <input type="checkbox"/> Rainfall/precipitation data                 | <input type="checkbox"/> Other studies:      |
| <input type="checkbox"/> Geologic maps                 | <input checked="" type="checkbox"/> Existing delineation(s) for site |                                              |

Other drawings (plan view), notes:



Other forms related to this feature:  Yes  No

~~1D-01-T3~~ ED-02-65

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)



OHWL DATA SHEET

ED-02-65

Project: SSEP Date: 10/30/20

Investigator(s): AG + LB

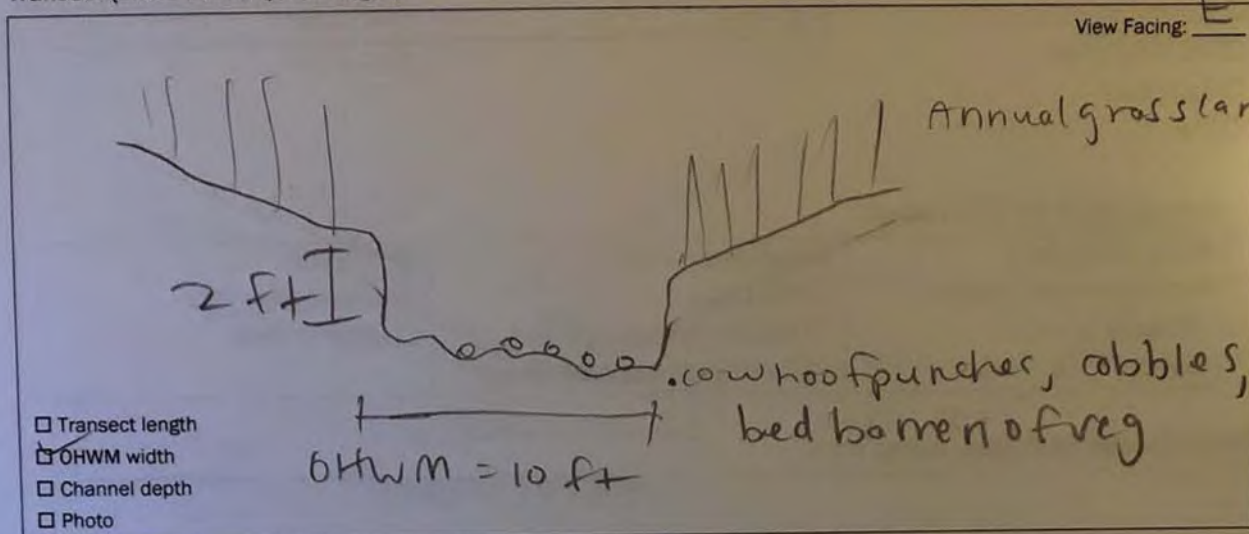
Feature Name:

Site Location:

intermittent drainage

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

|                                                                             |                                                               |
|-----------------------------------------------------------------------------|---------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank                 | <input checked="" type="checkbox"/> Sediment sorting          |
| <input checked="" type="checkbox"/> Shelving                                | <input type="checkbox"/> Leaf litter disturbed or washed away |
| <input type="checkbox"/> Changes in the character of soil                   | <input type="checkbox"/> Scour                                |
| <input type="checkbox"/> Destruction of terrestrial vegetation              | <input type="checkbox"/> Deposition                           |
| <input type="checkbox"/> Presence of litter and debris                      | <input checked="" type="checkbox"/> Bed and banks             |
| <input type="checkbox"/> Wracking                                           | <input type="checkbox"/> Water staining                       |
| <input checked="" type="checkbox"/> Vegetation matted down, bent, or absent | <input checked="" type="checkbox"/> Change in plant community |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM | 100       | 0    | 0      | 0       | 0        |
| Below OHWM | 75        | 0    | 0      | 25      | 0        |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM | 0        | 0         | 100      | 0        |
| Below OHWM | 0        | 0         | 0        | 100      |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

|                                                                |                                  |                                      |
|----------------------------------------------------------------|----------------------------------|--------------------------------------|
| <b>Upland Species:</b><br><u>Bro. hor.</u><br><u>Hol. vir.</u> | <b>Bank Species:</b><br><u>∅</u> | <b>Emergent Species:</b><br><u>∅</u> |
|----------------------------------------------------------------|----------------------------------|--------------------------------------|

OHWL DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

heavy grazing + cattle traffic. Potentially influenced by leaking sprinkler/seasonal wetland.

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Min. depth:

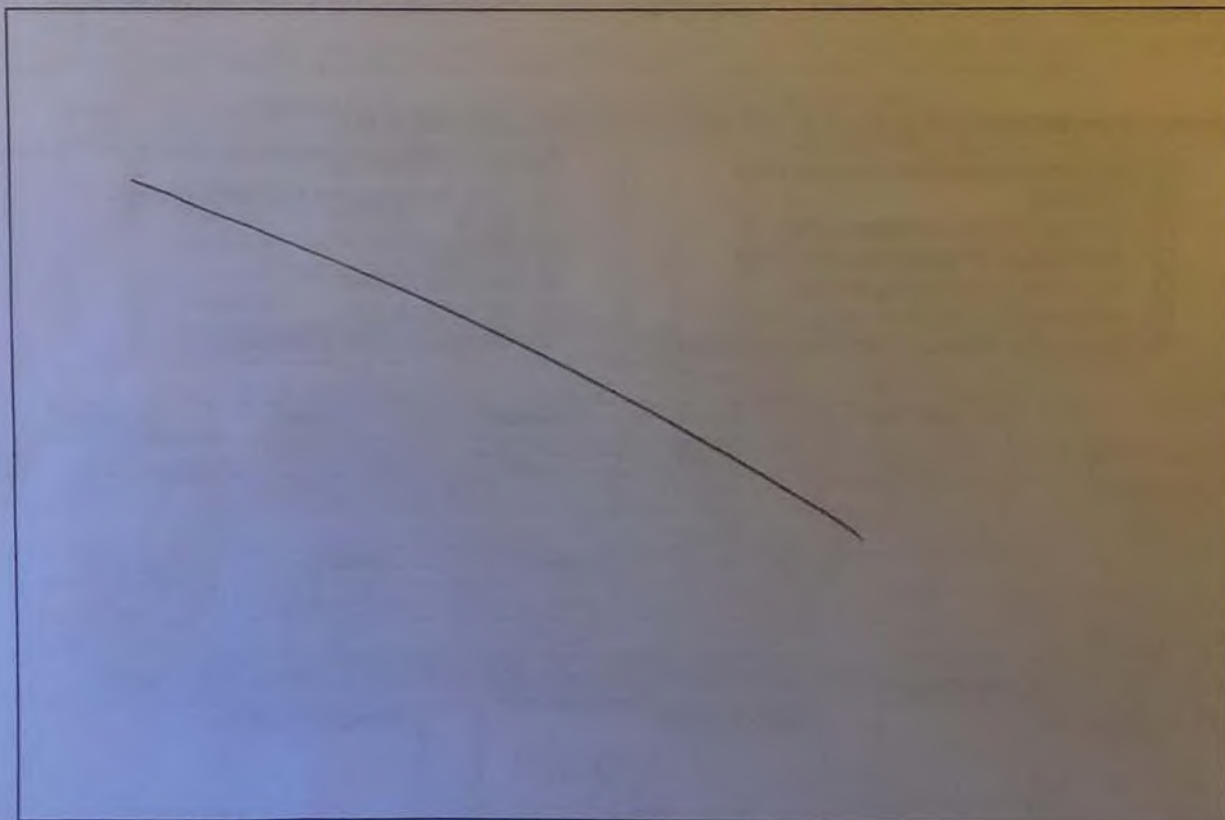
Temp:

Max. depth:

Checklist of resources (if available):

|                                                        |                                                                      |                                              |
|--------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography | <input type="checkbox"/> Vegetation maps                             | <input checked="" type="checkbox"/> GPS unit |
| <input type="checkbox"/> Remotely-sensed images        | <input checked="" type="checkbox"/> Soil maps                        | <input type="checkbox"/> Stream gage data    |
| <input type="checkbox"/> Topographic maps              | <input type="checkbox"/> Rainfall/precipitation data                 | <input type="checkbox"/> Other studies:      |
| <input type="checkbox"/> Geologic maps                 | <input checked="" type="checkbox"/> Existing delineation(s) for site |                                              |

Other drawings (plan view), notes:



Other forms related to this feature:  Yes  No

~~ID-DI-T4~~ ED-02-84

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)



OHWM DATA SHEET

Project: SSEP Date: 10/30/20

ID-01-71

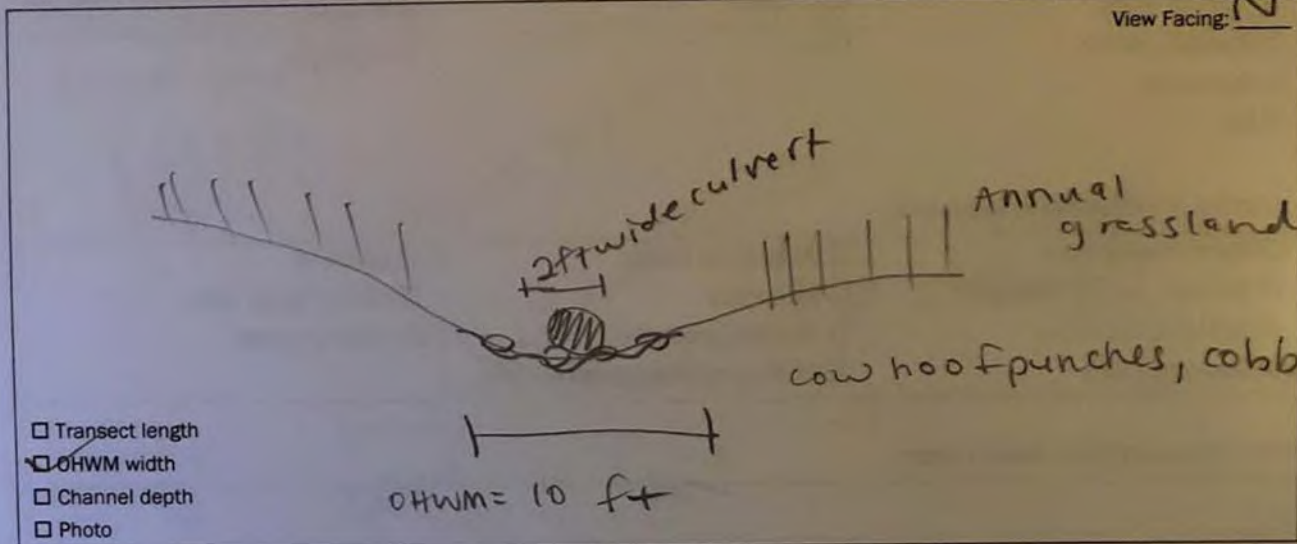
Investigator(s): A6+LB Feature Name: \_\_\_\_\_

Site Location:

At Meiss Rd culvert inlet, flows into basin

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

|                                                                  |                                                               |
|------------------------------------------------------------------|---------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank      | <input checked="" type="checkbox"/> Sediment sorting          |
| <input type="checkbox"/> Shelving                                | <input type="checkbox"/> Leaf litter disturbed or washed away |
| <input type="checkbox"/> Changes in the character of soil        | <input type="checkbox"/> Scour                                |
| <input type="checkbox"/> Destruction of terrestrial vegetation   | <input type="checkbox"/> Deposition                           |
| <input type="checkbox"/> Presence of litter and debris           | <input checked="" type="checkbox"/> Bed and banks             |
| <input type="checkbox"/> Wracking                                | <input type="checkbox"/> Water staining                       |
| <input type="checkbox"/> Vegetation matted down, bent, or absent | <input checked="" type="checkbox"/> Change in plant community |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM | 100       | 0    | 0      | 0       | 0        |
| Below OHWM | 50        | 0    | 0      | 50      | 0        |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM | 0        | 0         | 100      | 0        |
| Below OHWM | 0        | 0         | 100      | 0        |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

| Upland Species:                                                   | Bank Species:           | Emergent Species:                            |
|-------------------------------------------------------------------|-------------------------|----------------------------------------------|
| <p><u>Bro. hor.</u><br/><u>Hol. vir.</u><br/><u>Fes. per.</u></p> | <p><u>Fes. per.</u></p> | <p><u>Hor. mar.</u><br/><u>Eng. cas.</u></p> |

OHWL DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

Grazing, cattle traffic. Culvert across  
Meiss Rd., runoff from Meiss Rd.

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Min. depth:

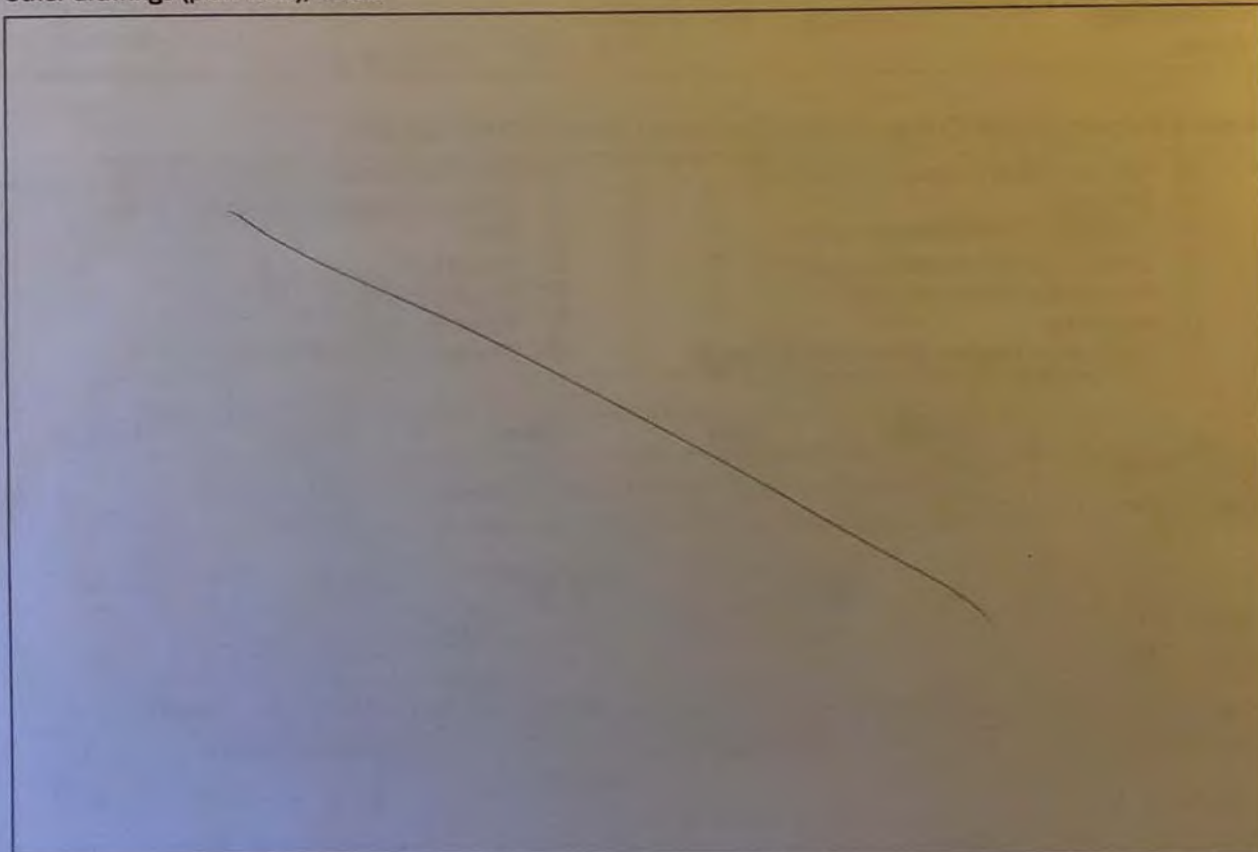
Temp:

Max. depth:

Checklist of resources (if available):

|                                                        |                                                                      |                                              |
|--------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography | <input type="checkbox"/> Vegetation maps                             | <input checked="" type="checkbox"/> GPS unit |
| <input type="checkbox"/> Remotely-sensed images        | <input checked="" type="checkbox"/> Soil maps                        | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps   | <input type="checkbox"/> Rainfall/precipitation data                 | <input type="checkbox"/> Other studies:      |
| <input type="checkbox"/> Geologic maps                 | <input checked="" type="checkbox"/> Existing delineation(s) for site |                                              |

Other drawings (plan view), notes:



Other forms related to this feature:  Yes  No

~~ND-02-T6/7 Basin-01~~

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)

1D-01-82,83,87

P-03

SW-29, 30, 31



OHWM DATA SHEET

Project: SSEP Date: 10/30/20

Investigator(s): AG+LB

Feature Name: \_\_\_\_\_

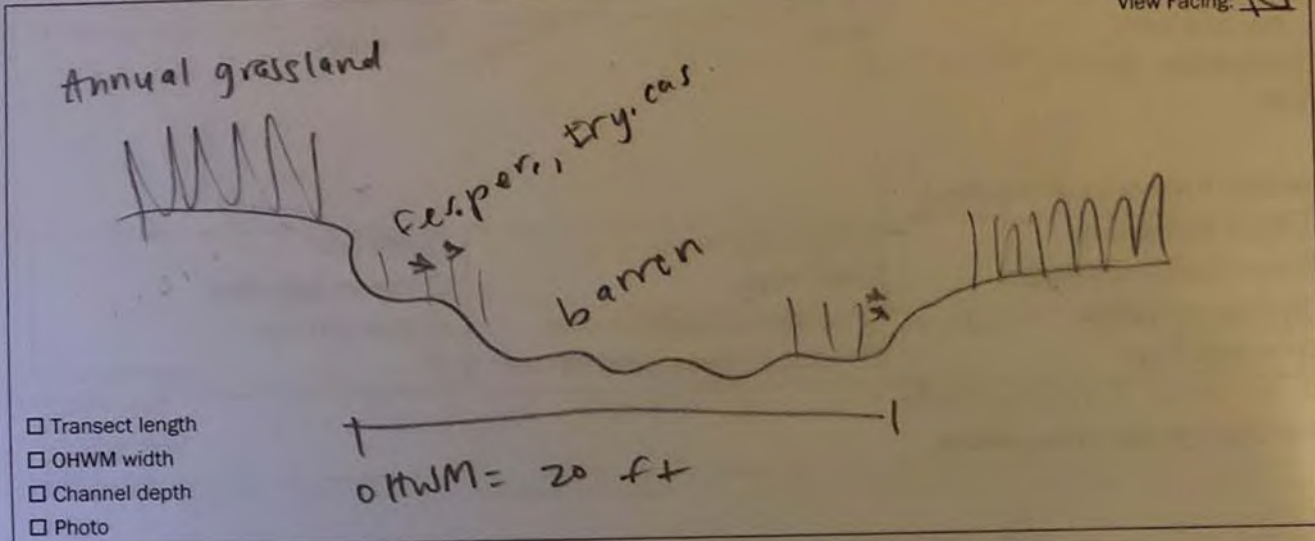
21572  
ID-01-82

Site Location:

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):

View Facing: N



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

- |                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank<br><input type="checkbox"/> Shelving<br><input type="checkbox"/> Changes in the character of soil<br><input type="checkbox"/> Destruction of terrestrial vegetation<br><input type="checkbox"/> Presence of litter and debris<br><input type="checkbox"/> Wracking<br><input checked="" type="checkbox"/> Vegetation matted down, bent, or absent | <input type="checkbox"/> Sediment sorting<br><input type="checkbox"/> Leaf litter disturbed or washed away<br><input type="checkbox"/> Scour<br><input type="checkbox"/> Deposition<br><input type="checkbox"/> Bed and banks<br><input type="checkbox"/> Water staining<br><input checked="" type="checkbox"/> Change in plant community |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM | 100       | 0    | 0      | 0       | 0        |
| Below OHWM | 100       | 0    | 0      | 0       | 0        |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM | 0        | 0         | 100      | 0        |
| Below OHWM | 0        | 0         | 50       | 50       |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

| Upland Species:         | Bank Species: | Emergent Species:      |
|-------------------------|---------------|------------------------|
| Ho l. vir.<br>Bro. hor. | Fes. per.     | Hor. mar.<br>Ery. cas. |

OHWM DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

cattle traffic, grazing

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Min. depth:

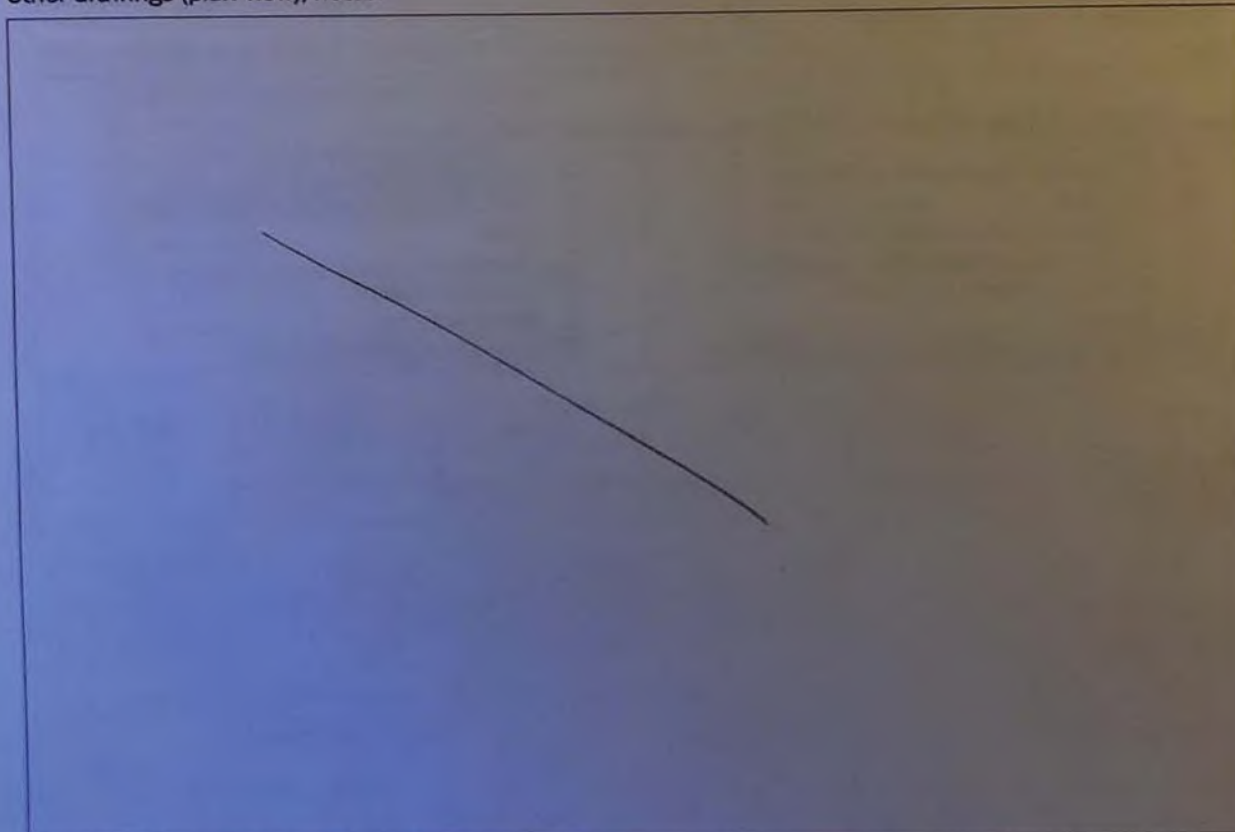
Temp:

Max. depth:

Checklist of resources (if available):

|                                                        |                                                                      |                                              |
|--------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography | <input type="checkbox"/> Vegetation maps                             | <input checked="" type="checkbox"/> GPS unit |
| <input type="checkbox"/> Remotely-sensed images        | <input checked="" type="checkbox"/> Soil maps                        | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps   | <input type="checkbox"/> Rainfall/precipitation data                 | <input type="checkbox"/> Other studies:      |
| <input type="checkbox"/> Geologic maps                 | <input checked="" type="checkbox"/> Existing delineation(s) for site |                                              |

Other drawings (plan view), notes:



Other forms related to this feature:  Yes  No

10-05-15/7

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)

10-01-71, 83, 87

P-03

SW-29, 30, 31



OHWM DATA SHEET

Project: SSEP Date: 10/30/20

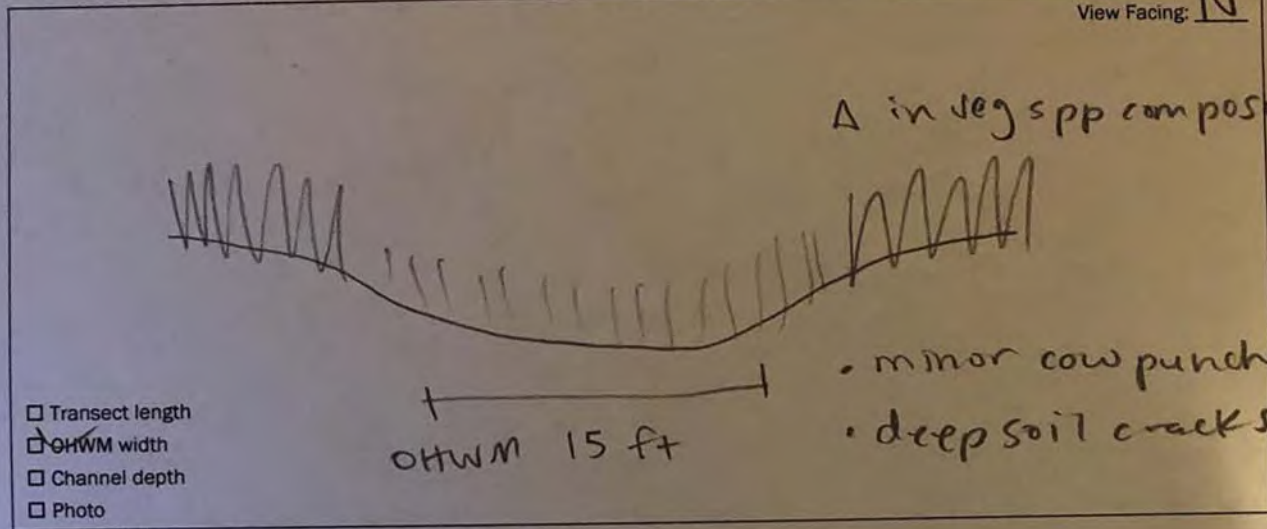
Investigator(s): AG+LB

Feature Name: ID-01-83

Site Location:

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)  $\phi$

- |                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank<br><input type="checkbox"/> Shelving<br><input type="checkbox"/> Changes in the character of soil<br><input type="checkbox"/> Destruction of terrestrial vegetation<br><input type="checkbox"/> Presence of litter and debris<br><input type="checkbox"/> Wracking<br><input type="checkbox"/> Vegetation matted down, bent, or absent | <input type="checkbox"/> Sediment sorting<br><input type="checkbox"/> Leaf litter disturbed or washed away<br><input type="checkbox"/> Scour<br><input type="checkbox"/> Deposition<br><input type="checkbox"/> Bed and banks<br><input type="checkbox"/> Water staining<br><input checked="" type="checkbox"/> Change in plant community |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM |           |      |        |         |          |
| Below OHWM | 100       | ○    | ○      | ○       | ○        |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM |          |           |          |          |
| Below OHWM | ○        | ○         | 100      | ○        |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

|                                                  |                      |                                                                                            |
|--------------------------------------------------|----------------------|--------------------------------------------------------------------------------------------|
| <b>Upland Species:</b><br>Hol. vir.<br>Bro. hor. | <b>Bank Species:</b> | <b>Emergent Species:</b><br>Pol. man.<br>Fes. per.<br>Alo. sac.<br>Ery. ca s.<br>Hor. mar. |
|--------------------------------------------------|----------------------|--------------------------------------------------------------------------------------------|

OHWM DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

Some grazing

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Min. depth:

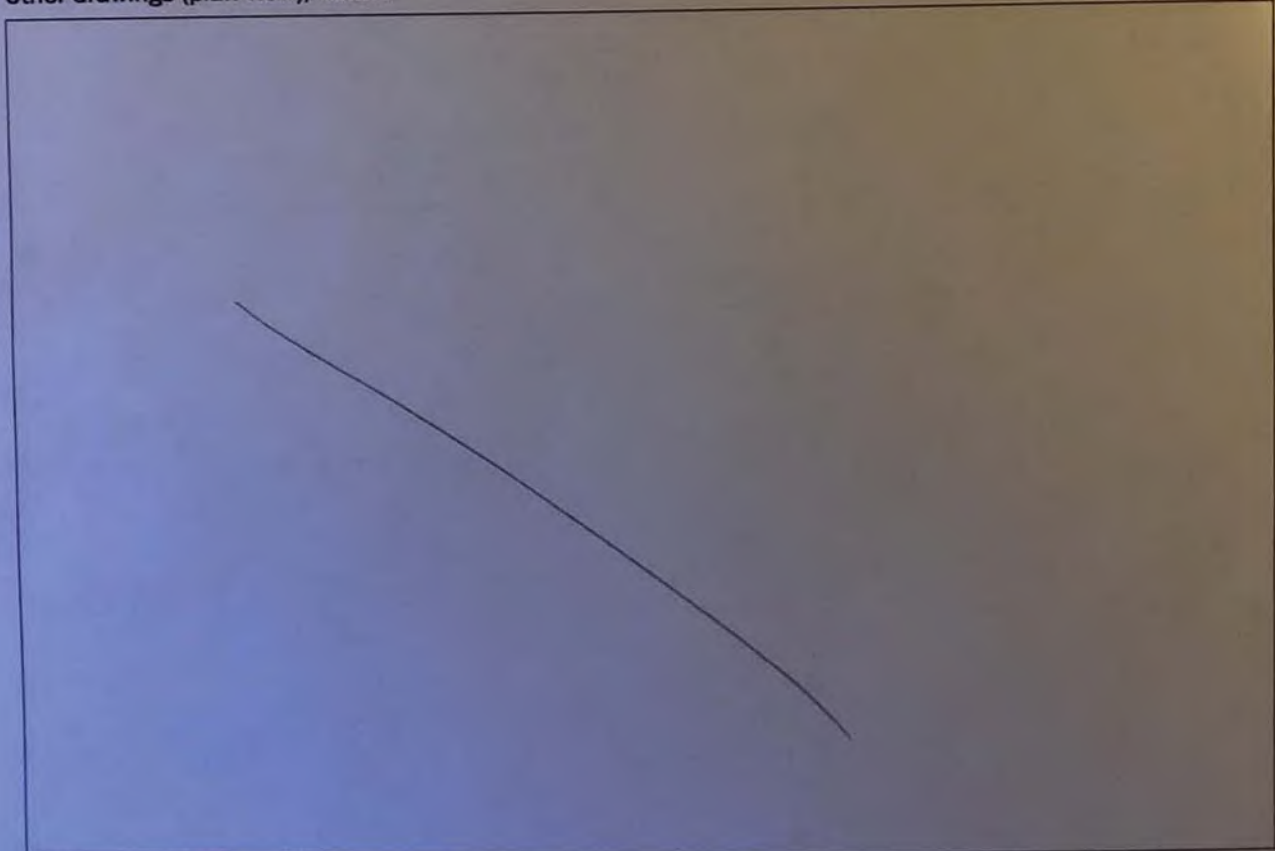
Temp:

Max. depth:

Checklist of resources (if available):

|                                                      |                                                                      |                                              |
|------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------|
| <input type="checkbox"/> Aerial photography          | <input type="checkbox"/> Vegetation maps                             | <input checked="" type="checkbox"/> GPS unit |
| <input type="checkbox"/> Remotely-sensed images      | <input checked="" type="checkbox"/> Soil maps                        | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps | <input type="checkbox"/> Rainfall/precipitation data                 | <input type="checkbox"/> Other studies:      |
| <input type="checkbox"/> Geologic maps               | <input checked="" type="checkbox"/> Existing delineation(s) for site |                                              |

Other drawings (plan view), notes:



Other forms related to this feature:  Yes  No

ND-02-15/6

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)

ID-01-71,82,8

P-03

SW-29,30,31



OHWM DATA SHEET

Project: SSEP Date: 11/4/20

Transect: 237

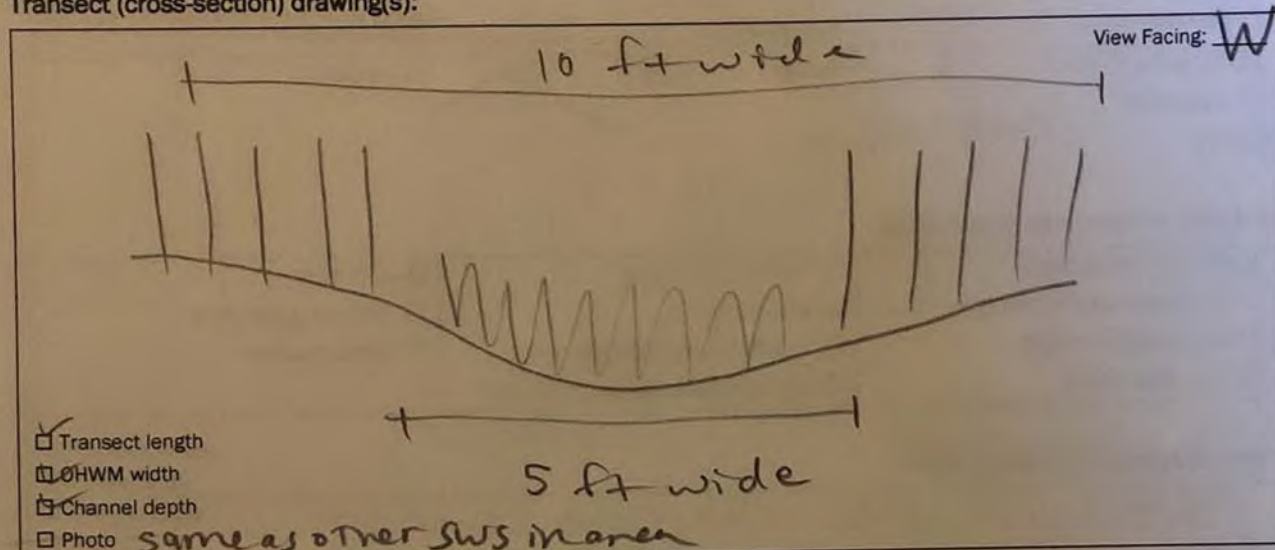
Investigator(s): PK+AG

Feature Name: SWS-11

Site Location: Drainage complex east of P03

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

- |                                                                             |                                                                            |
|-----------------------------------------------------------------------------|----------------------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank                 | <input type="checkbox"/> Sediment sorting                                  |
| <input type="checkbox"/> Shelving                                           | <input type="checkbox"/> Leaf litter disturbed or washed away              |
| <input type="checkbox"/> Changes in the character of soil                   | <input type="checkbox"/> Scour                                             |
| <input type="checkbox"/> Destruction of terrestrial vegetation              | <input type="checkbox"/> Deposition                                        |
| <input type="checkbox"/> Presence of litter and debris                      | <input type="checkbox"/> Bed and banks                                     |
| <input type="checkbox"/> Wracking                                           | <input type="checkbox"/> Water staining                                    |
| <input checked="" type="checkbox"/> Vegetation matted down, bent, or absent | <input checked="" type="checkbox"/> Change in plant community and/or cover |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM |           |      |        |         |          |
| Below OHWM | 100       |      |        |         |          |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM | 0        | 0         | 100      | 0        |
| Below OHWM |          |           | 75       | 25       |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

| Upland Species:                  | Bank Species: | Emergent Species:  |
|----------------------------------|---------------|--------------------|
| Bro hor<br>Fly capped<br>Hol vir | same →        | Fes per<br>Hor man |

# OHW DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

## Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Min. depth:

Temp:

Max. depth:

## Checklist of resources (if available):

- |                                                        |                                                                      |                                              |
|--------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography | <input type="checkbox"/> Vegetation maps                             | <input checked="" type="checkbox"/> GPS unit |
| <input type="checkbox"/> Remotely-sensed images        | <input checked="" type="checkbox"/> Soil maps                        | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps   | <input type="checkbox"/> Rainfall/precipitation data                 | <input type="checkbox"/> Other studies:      |
| <input type="checkbox"/> Geologic maps                 | <input checked="" type="checkbox"/> Existing delineation(s) for site |                                              |

## Other drawings (plan view), notes:

Other forms related to this feature:  Yes  No ED-XX

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)



OHWM DATA SHEET

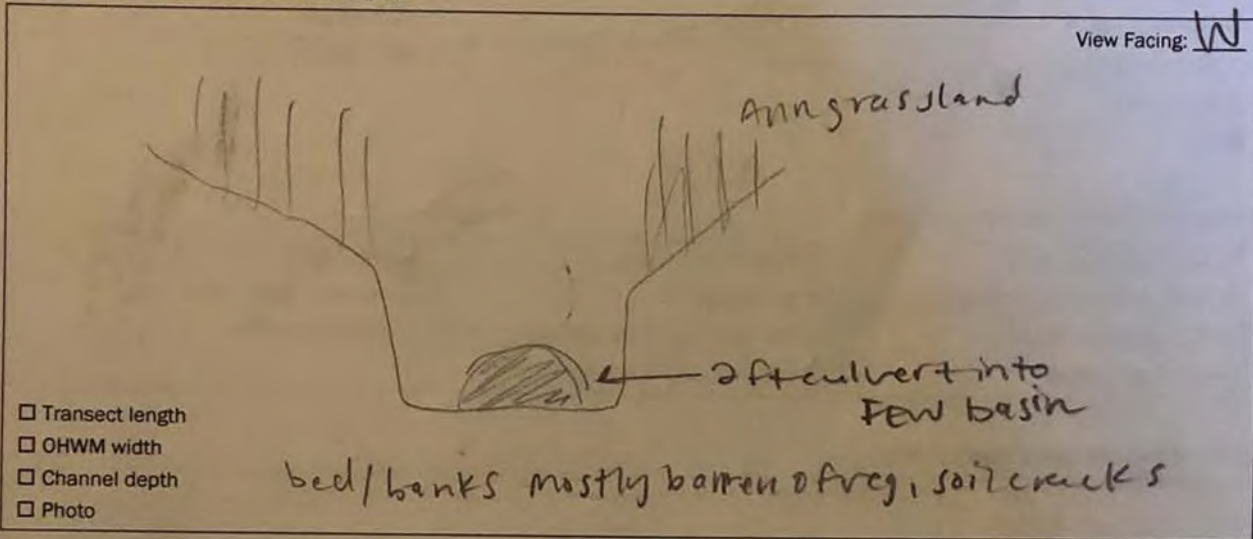
Project: SSEPA Date: 11/4/20  
 Investigator(s): PK+AG

Feature Name: SEED-05-102

Site Location: immediately upstream of Basin-01 P-03

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

- |                                                                             |                                                               |
|-----------------------------------------------------------------------------|---------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank                 | <input type="checkbox"/> Sediment sorting                     |
| <input checked="" type="checkbox"/> Shelving                                | <input type="checkbox"/> Leaf litter disturbed or washed away |
| <input type="checkbox"/> Changes in the character of soil                   | <input type="checkbox"/> Scour                                |
| <input type="checkbox"/> Destruction of terrestrial vegetation              | <input type="checkbox"/> Deposition                           |
| <input type="checkbox"/> Presence of litter and debris                      | <input checked="" type="checkbox"/> Bed and banks             |
| <input type="checkbox"/> Wracking                                           | <input type="checkbox"/> Water staining                       |
| <input checked="" type="checkbox"/> Vegetation matted down, bent, or absent | <input type="checkbox"/> Change in plant community            |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM |           |      |        |         |          |
| Below OHWM | 100       | 0    | 0      | 0       | 0        |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM | 0        | 0         | 100      | 0        |
| Below OHWM |          |           | 25       | 75       |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

| Upland Species:                       | Bank Species: | Emergent Species:     |
|---------------------------------------|---------------|-----------------------|
| Bro. hor.<br>Hol. vir.<br>Big cap-med | ∅             | Hor mar.<br>Fes. per. |



OHWL DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

potentially influenced by leaking cattle trough,  
green veg observed out of season

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

~~Avg. depth:~~

Min. depth:

~~Temp:~~

Max. depth:

Checklist of resources (if available):

|                                                        |                                                                      |                                              |
|--------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography | <input type="checkbox"/> Vegetation maps                             | <input checked="" type="checkbox"/> GPS unit |
| <input type="checkbox"/> Remotely-sensed images        | <input checked="" type="checkbox"/> Soil maps                        | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps   | <input type="checkbox"/> Rainfall/precipitation data                 | <input type="checkbox"/> Other studies:      |
| <input type="checkbox"/> Geologic maps                 | <input checked="" type="checkbox"/> Existing delineation(s) for site |                                              |

Other drawings (plan view), notes:

• remainder of feature upstream = SWS-11,  
bed and bank disappears



Other forms related to this feature:  Yes  No *upstream transects*

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)



OHWM DATA SHEET

1D-01-87

Project: SSEP Date: 11/4/20

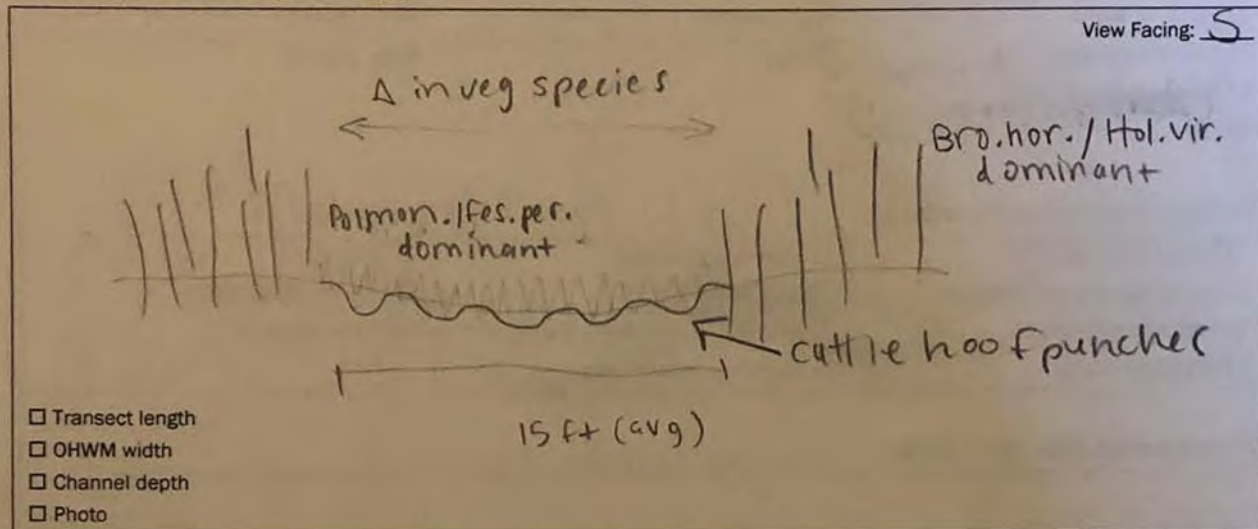
Investigator(s): PK+AG

Feature Name:

Site Location:

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

|                                                                             |                                                               |
|-----------------------------------------------------------------------------|---------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank                 | <input type="checkbox"/> Sediment sorting                     |
| <input type="checkbox"/> Shelving                                           | <input type="checkbox"/> Leaf litter disturbed or washed away |
| <input type="checkbox"/> Changes in the character of soil                   | <input type="checkbox"/> Scour                                |
| <input type="checkbox"/> Destruction of terrestrial vegetation              | <input type="checkbox"/> Deposition                           |
| <input type="checkbox"/> Presence of litter and debris                      | <input type="checkbox"/> Bed and banks                        |
| <input type="checkbox"/> Wracking                                           | <input type="checkbox"/> Water staining                       |
| <input checked="" type="checkbox"/> Vegetation matted down, bent, or absent | <input checked="" type="checkbox"/> Change in plant community |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM | 100% 10   | 0    | 0      | 0       | 0        |
| Below OHWM | 100% 10   | 0    | 0      | 0       | 0        |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM | 0        | 0         | 75       | 25       |
| Below OHWM | 0        | 0         | 75       | 25       |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

| Upland Species:                                                | Bank Species: | Emergent Species:                                                                                                                                              |
|----------------------------------------------------------------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><i>Holocarpha virgata</i><br/> <i>Bromus hordeaceus</i></p> |               | <p><i>Alypogon monspeliensis</i><br/> <i>Eryngium castrense</i><br/> <i>Festuca perennis</i><br/> <i>Lythrum hyssopifolia</i><br/> <i>Alopecurus sacc.</i></p> |

OHWM DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

grazing, cattle trails

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Min. depth:

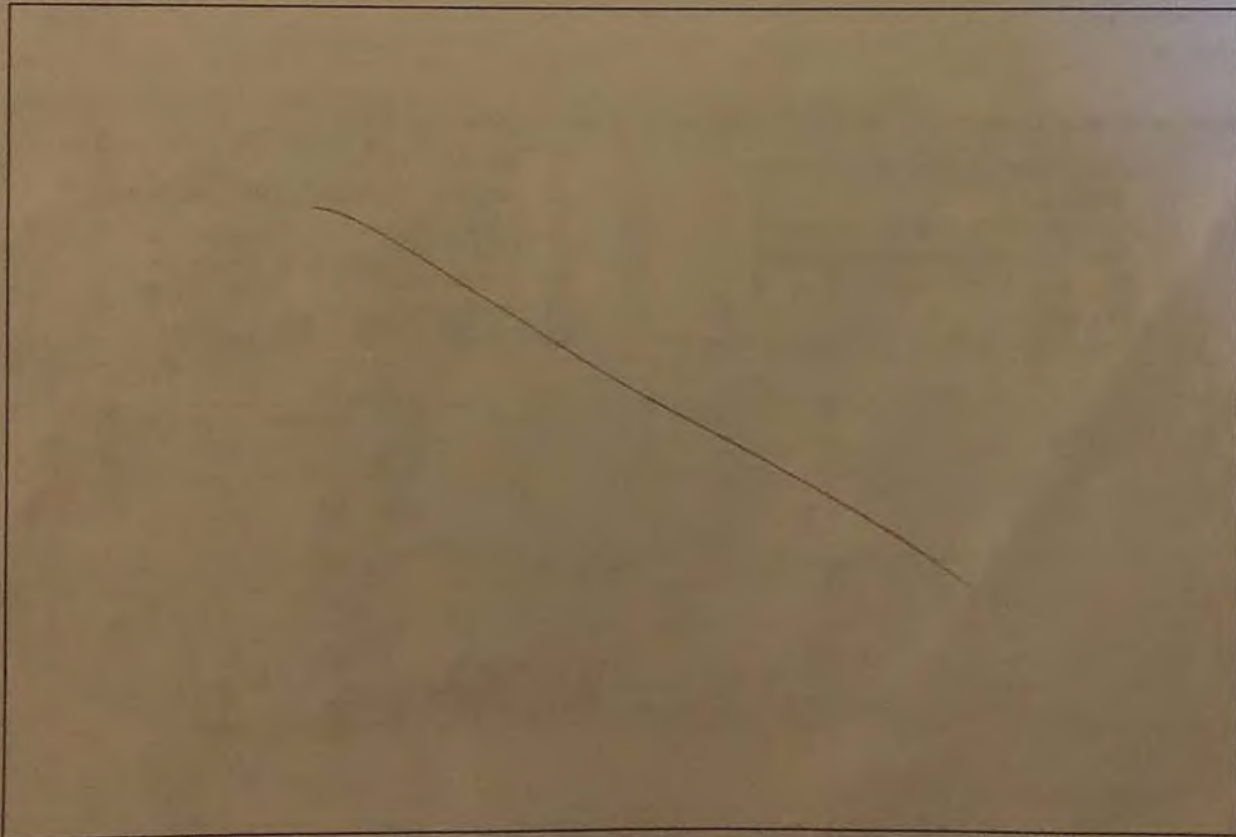
Temp:

Max. depth:

Checklist of resources (if available):

|                                                        |                                                                      |                                              |
|--------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography | <input type="checkbox"/> Vegetation maps                             | <input checked="" type="checkbox"/> GPS unit |
| <input type="checkbox"/> Remotely-sensed images        | <input checked="" type="checkbox"/> Soil maps                        | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps   | <input type="checkbox"/> Rainfall/precipitation data                 | <input type="checkbox"/> Other studies:      |
| <input type="checkbox"/> Geologic maps                 | <input checked="" type="checkbox"/> Existing delineation(s) for site |                                              |

Other drawings (plan view), notes:



Other forms related to this feature:  Yes  No

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)

100 yr floodplain of Consummes River, ID-01 and associated SWs,



OHWM DATA SHEET

Project: SSEP Date: 11/4/20

Investigator(s): PK+AG

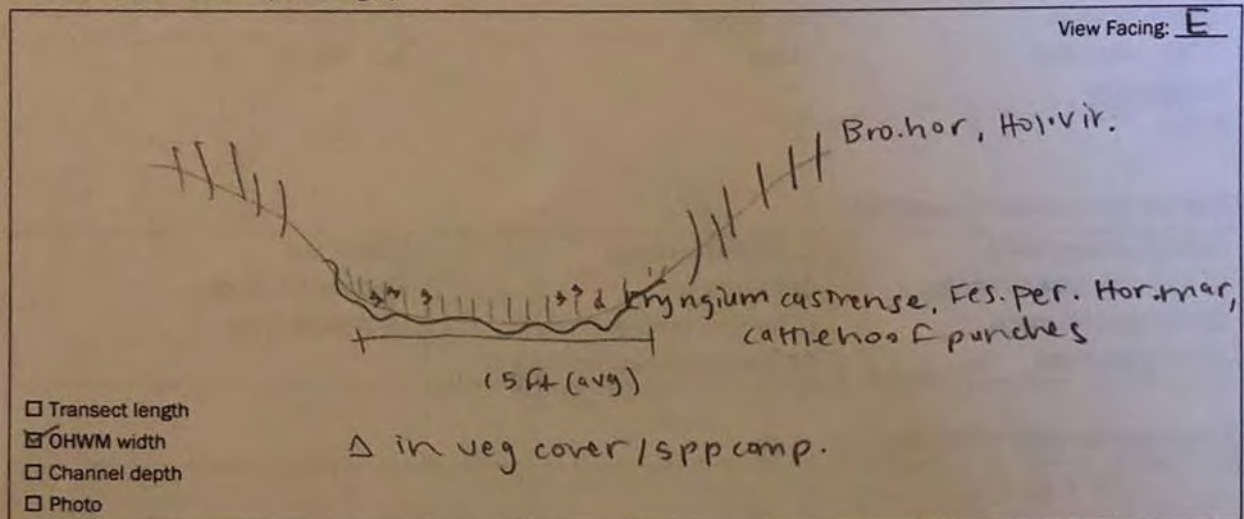
Feature Name:

SWS-09-96

Site Location:

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

|                                                                  |                                                               |
|------------------------------------------------------------------|---------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank      | <input type="checkbox"/> Sediment sorting                     |
| <input type="checkbox"/> Shelving                                | <input type="checkbox"/> Leaf litter disturbed or washed away |
| <input type="checkbox"/> Changes in the character of soil        | <input type="checkbox"/> Scour                                |
| <input type="checkbox"/> Destruction of terrestrial vegetation   | <input type="checkbox"/> Deposition                           |
| <input type="checkbox"/> Presence of litter and debris           | <input type="checkbox"/> Bed and banks                        |
| <input type="checkbox"/> Wracking                                | <input type="checkbox"/> Water staining                       |
| <input type="checkbox"/> Vegetation matted down, bent, or absent | <input checked="" type="checkbox"/> Change in plant community |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM | 100       | 0    | 0      | 0       | 0        |
| Below OHWM | 100       | 0    | 0      | 0       | 0        |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM | 0        | 0         | 100      | 0        |
| Below OHWM | 0        | 0         | 50       | 50       |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

|                        |                      |                          |
|------------------------|----------------------|--------------------------|
| <b>Upland Species:</b> | <b>Bank Species:</b> | <b>Emergent Species:</b> |
|                        |                      |                          |

OHWM DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

grazing

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Min. depth:

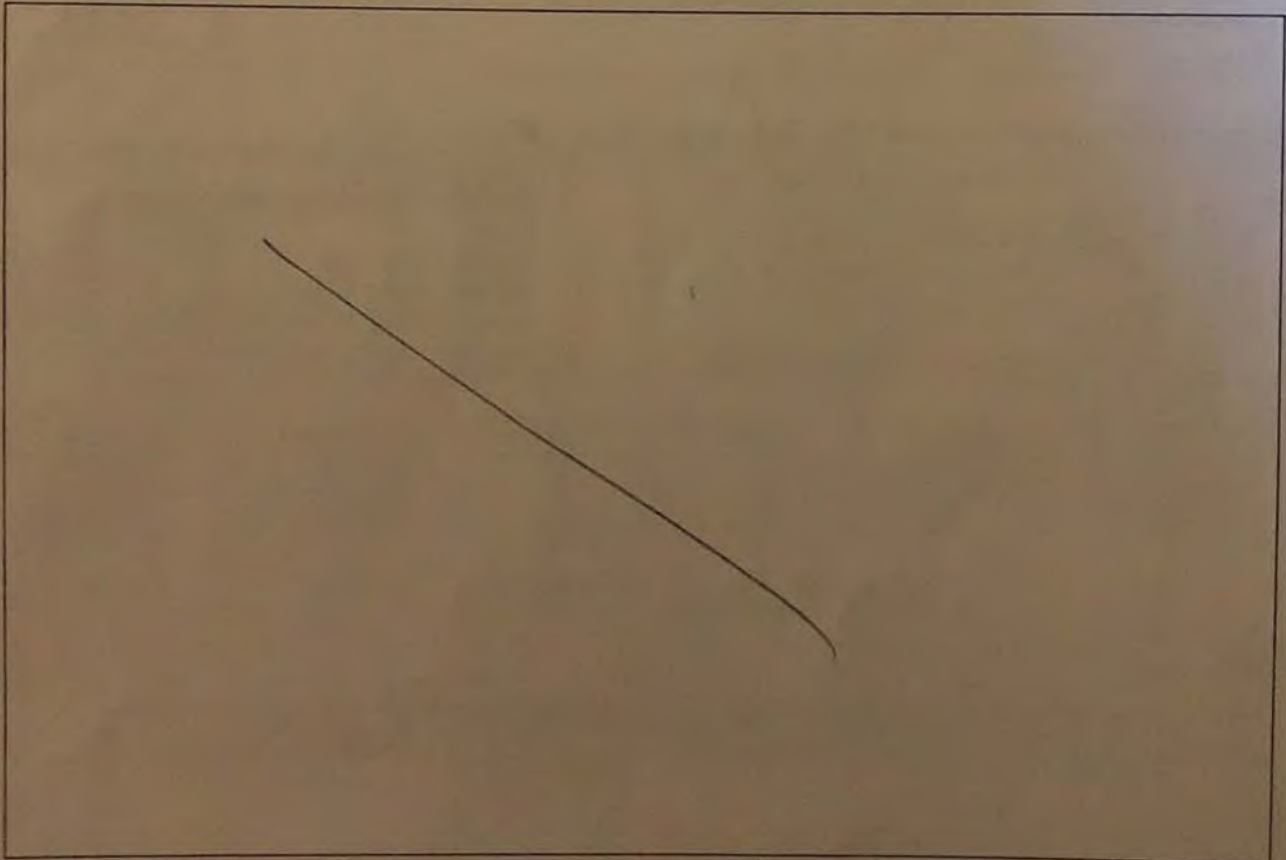
Temp:

Max. depth:

Checklist of resources (if available):

- |                                                        |                                                                      |                                              |
|--------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography | <input type="checkbox"/> Vegetation maps                             | <input checked="" type="checkbox"/> GPS unit |
| <input type="checkbox"/> Remotely-sensed images        | <input checked="" type="checkbox"/> Soil maps                        | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps   | <input type="checkbox"/> Rainfall/precipitation data                 | <input type="checkbox"/> Other studies:      |
| <input type="checkbox"/> Geologic maps                 | <input checked="" type="checkbox"/> Existing delineation(s) for site |                                              |

Other drawings (plan view), notes:



Other forms related to this feature:  Yes  No

~~ID-02~~ ID-01

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)



OHWM DATA SHEET

Project: SSEP Date: 11/4/20  
 Investigator(s): PK+AG

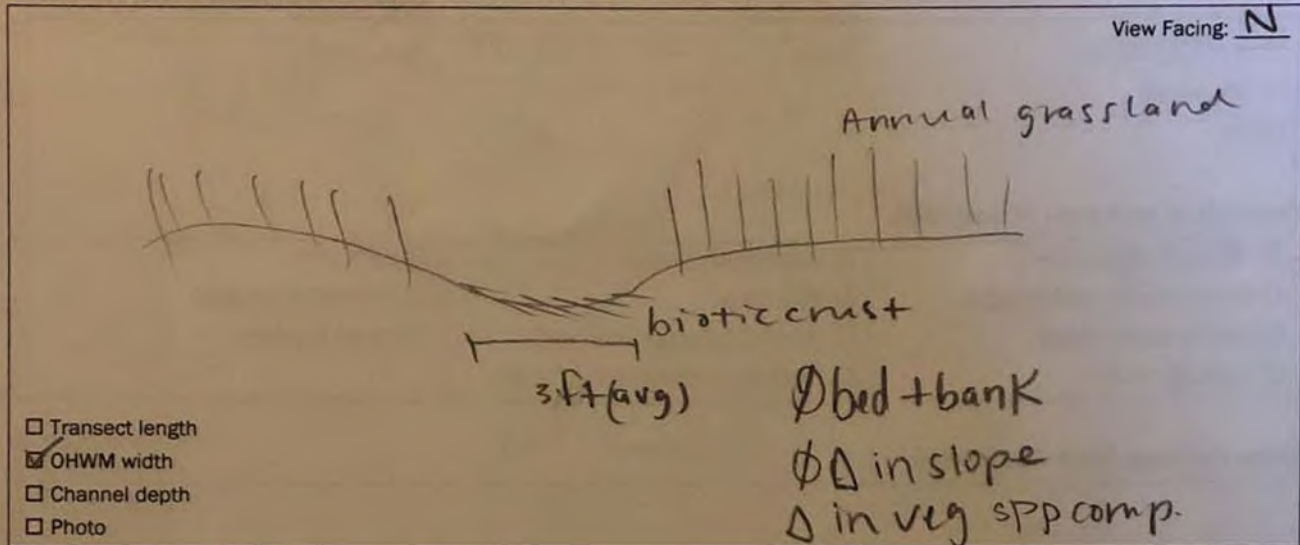
Feature Name:

**SWS-10-90**

Site Location:

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

- |                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank<br><input type="checkbox"/> Shelving<br><input type="checkbox"/> Changes in the character of soil<br><input type="checkbox"/> Destruction of terrestrial vegetation<br><input type="checkbox"/> Presence of litter and debris<br><input type="checkbox"/> Wracking<br><input checked="" type="checkbox"/> Vegetation matted down, bent, or absent | <input type="checkbox"/> Sediment sorting<br><input type="checkbox"/> Leaf litter disturbed or washed away<br><input type="checkbox"/> Scour<br><input type="checkbox"/> Deposition<br><input type="checkbox"/> Bed and banks<br><input type="checkbox"/> Water staining<br><input checked="" type="checkbox"/> Change in plant community |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM | 100       | ○    | ○      | ○       | ○        |
| Below OHWM |           |      |        |         |          |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM | ○        | ○         | 100      | ○        |
| Below OHWM |          |           |          |          |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

| Upland Species:                                                                  | Bank Species: | Emergent Species:                              |
|----------------------------------------------------------------------------------|---------------|------------------------------------------------|
| Hol. vir.<br>Bro. hor.<br>Fly. cap. med<br>Arna. alb.<br>Bro. cic.<br>Chamomile? |               | Lythrum hyssopifolia<br>Fac. per.<br>Hor. mar. |

OHWL DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

lightly grazed

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Min. depth:

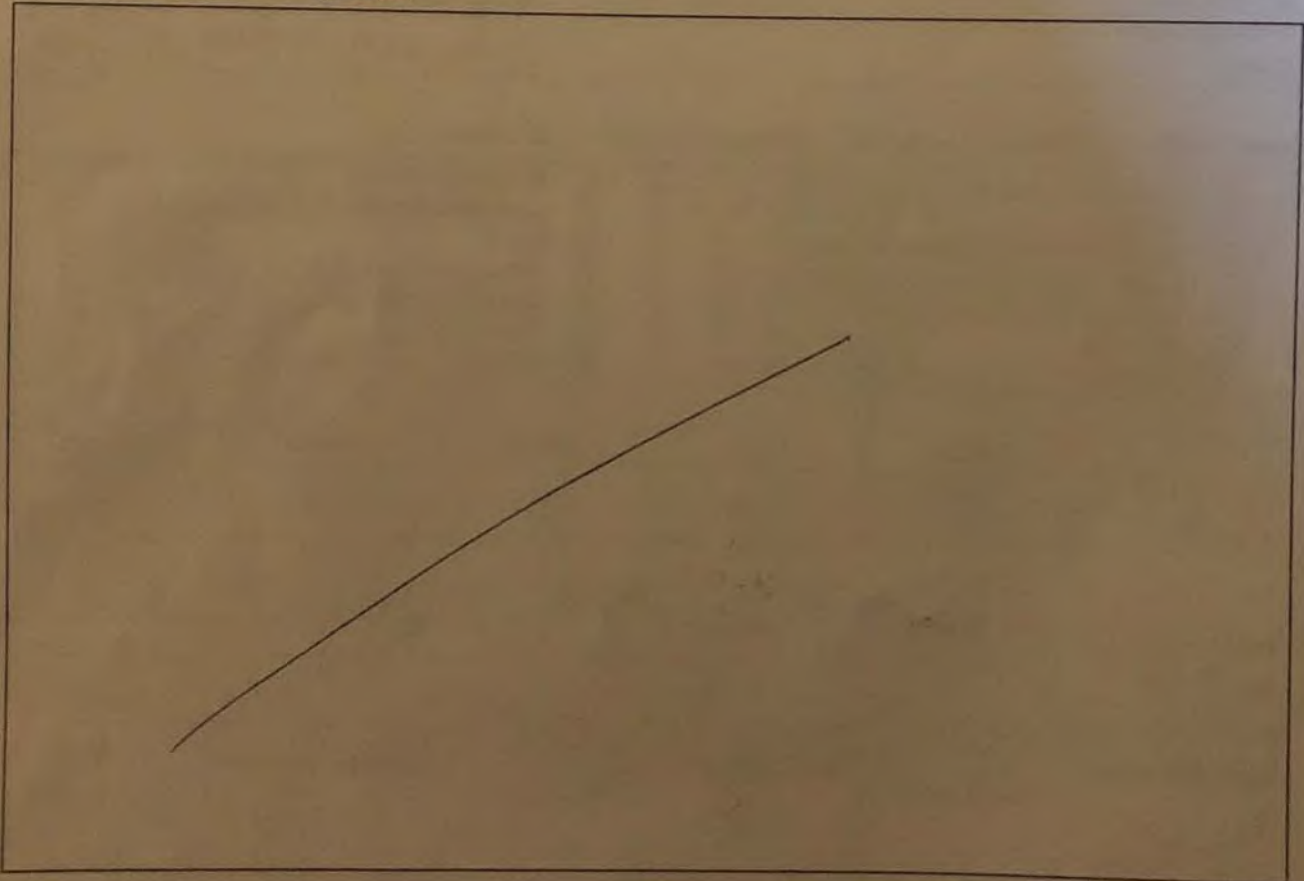
Temp:

Max. depth:

Checklist of resources (if available):

|                                                        |                                                           |                                              |
|--------------------------------------------------------|-----------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography | <input type="checkbox"/> Vegetation maps                  | <input checked="" type="checkbox"/> GPS unit |
| <input type="checkbox"/> Remotely-sensed images        | <input checked="" type="checkbox"/> Soil maps             | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps   | <input type="checkbox"/> Rainfall/precipitation data      | <input type="checkbox"/> Other studies:      |
| <input type="checkbox"/> Geologic maps                 | <input type="checkbox"/> Existing delineation(s) for site |                                              |

Other drawings (plan view), notes:



Other forms related to this feature:  Yes  No

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)

connects SW-33 and SW-34



OHWM DATA SHEET

Project: SSEP Date: 11/9/20

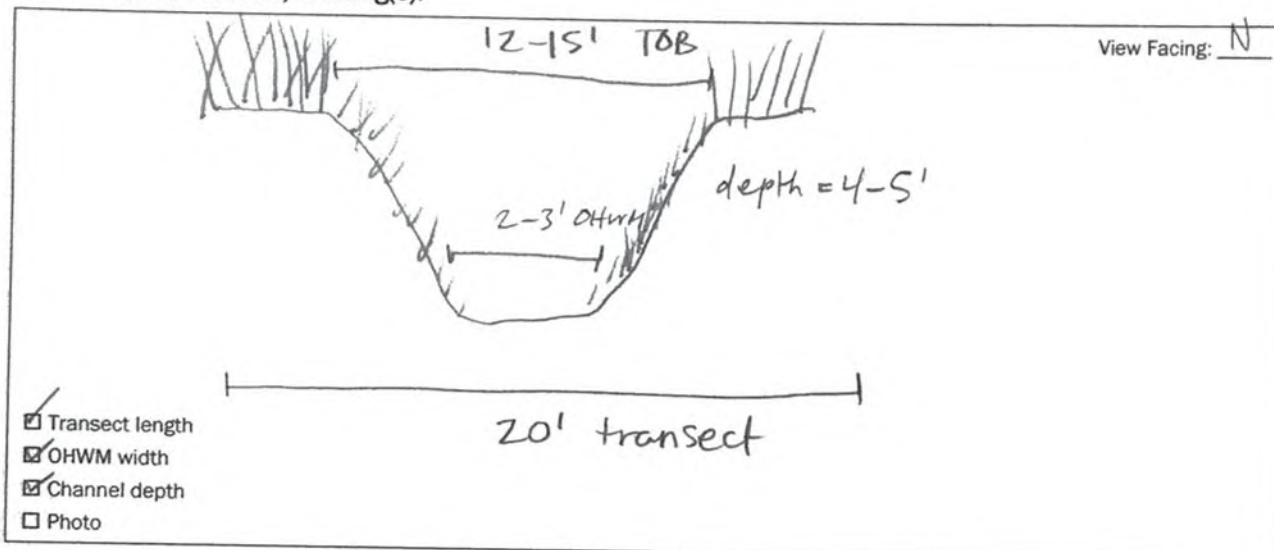
Investigator(s): AS + AC

Feature Name: D-02-103

Site Location: Mitigation lands - northern extent of project site

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

- |                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank<br><input type="checkbox"/> Shelving<br><input type="checkbox"/> Changes in the character of soil<br><input type="checkbox"/> Destruction of terrestrial vegetation<br><input type="checkbox"/> Presence of litter and debris<br><input type="checkbox"/> Wracking<br><input type="checkbox"/> Vegetation matted down, bent, or absent | <input type="checkbox"/> Sediment sorting<br><input type="checkbox"/> Leaf litter disturbed or washed away<br><input type="checkbox"/> Scour<br><input checked="" type="checkbox"/> Deposition<br><input checked="" type="checkbox"/> Bed and banks<br><input type="checkbox"/> Water staining<br><input checked="" type="checkbox"/> Change in plant community + cover |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM | 100       | 0    | 0      | 0       | 0        |
| Below OHWM | 100       | 0    | 0      | 0       | 0        |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM | 0        | 0         | 90       | 10       |
| Below OHWM | 0        | 0         | 5        | 95       |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

|                                                                                                                                                                                         |                             |                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------------------------|
| <p><b>Upland Species:</b></p> <ul style="list-style-type: none"> <li>- fennel</li> <li>- brazilian peppercod.</li> </ul> <p>access road next to banks or grassland/cultivated field</p> | <p><b>Bank Species:</b></p> | <p><b>Emergent Species:</b></p> <p>none</p> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------------------------|

OHWM DATA SHEET

Condition/Disturbances (e.g. erosion, grazing, culverts, etc.):

burrows in channel, invasive herbs, culverted

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Min. depth:

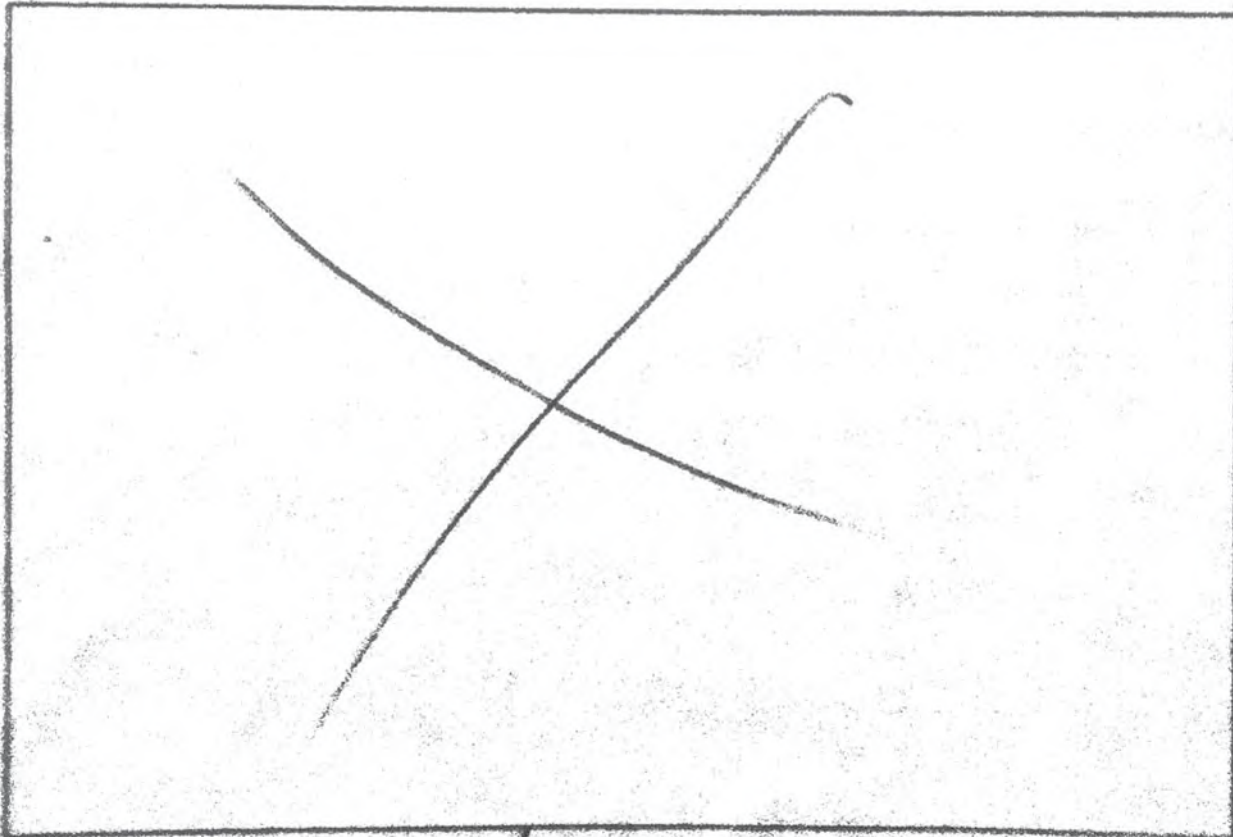
Temp:

Max. depth:

Checklist of resources (if available):

|                                                            |                                                                            |                                              |
|------------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography     | <input checked="" type="checkbox"/> Vegetation maps                        | <input checked="" type="checkbox"/> GPS unit |
| <input checked="" type="checkbox"/> Remotely-sensed images | <input checked="" type="checkbox"/> Soil maps                              | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps       | <input checked="" type="checkbox"/> Rainfall/precipitation data            | <input type="checkbox"/> Other studies:      |
| <input checked="" type="checkbox"/> Geologic maps          | <input checked="" type="checkbox"/> Existing delineation(s) for site → HCP |                                              |

Other drawings (plan view), notes:



Other forms related to this feature:  Yes  No

- Terrace, fringe, or floodplain outline (attached dataset)
- Low flow channel or other representative section (OHWM dataset)



OHWM DATA SHEET

Project: SSEP Date: 11/9/20

Investigator(s): AS + AC

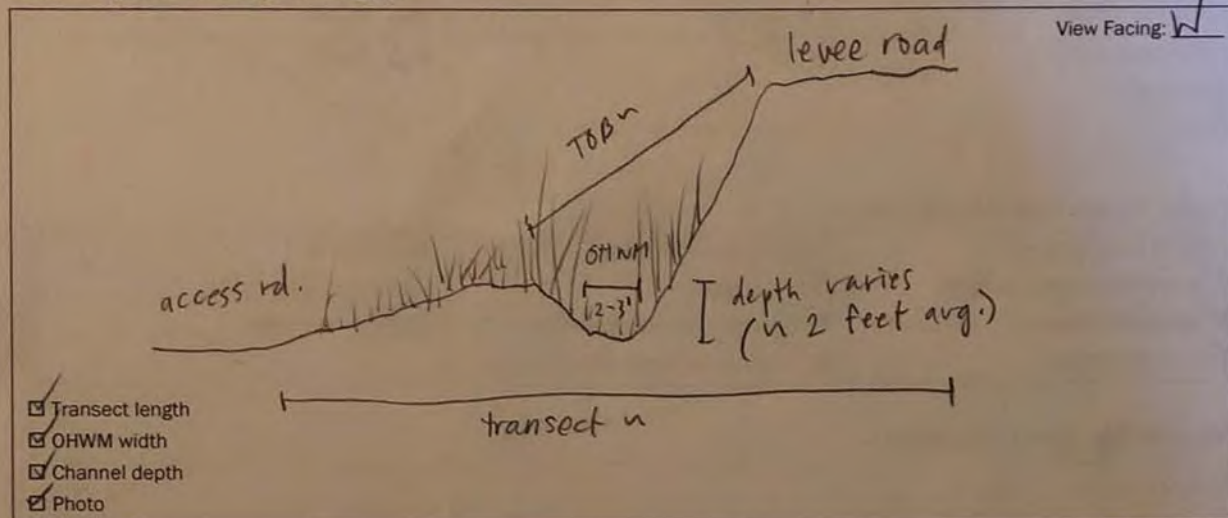
Feature Name: US-01-106

Site Location:

ditch at base of levee road along Sac. River in the northern portion of project site

Feature Type:  Ephemeral  Intermittent  Perennial  Other - ditch

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

- |                                                                             |                                                                       |
|-----------------------------------------------------------------------------|-----------------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank                 | <input type="checkbox"/> Sediment sorting                             |
| <input type="checkbox"/> Shelving                                           | <input type="checkbox"/> Leaf litter disturbed or washed away         |
| <input type="checkbox"/> Changes in the character of soil                   | <input type="checkbox"/> Scour                                        |
| <input type="checkbox"/> Destruction of terrestrial vegetation              | <input type="checkbox"/> Deposition                                   |
| <input checked="" type="checkbox"/> Presence of litter and debris           | <input type="checkbox"/> Bed and banks                                |
| <input type="checkbox"/> Wracking                                           | <input type="checkbox"/> Water staining                               |
| <input checked="" type="checkbox"/> Vegetation matted down, bent, or absent | <input checked="" type="checkbox"/> Change in plant community + cover |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM | 100       | 0    | 0      | 0       | 0        |
| Below OHWM | 100       | 0    | 0      | 0       | 0        |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM | 0        | 0         | 80       | 20       |
| Below OHWM | 0        | 0         | 100      | 0        |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

| Upland Species:                                           | Bank Species:                          | Emergent Species:                                |
|-----------------------------------------------------------|----------------------------------------|--------------------------------------------------|
| coyote melon<br>Epilobium ciliatum<br>Baccharis pilularis | fennel<br>Bromus diandrus<br>Avena sp. | fennel<br>Bromus spp.<br>Avena sp.<br>Medusahead |

OHWM DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

dominated by invasive/non-natives, including star thistle - some grading/soil disturbance present

Hydrology:

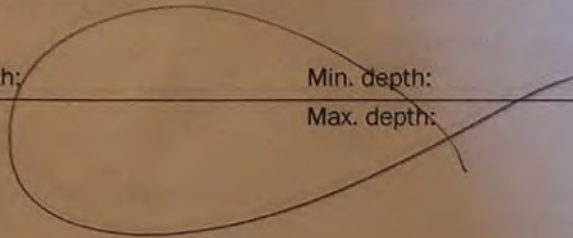
- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Min. depth:

Temp:

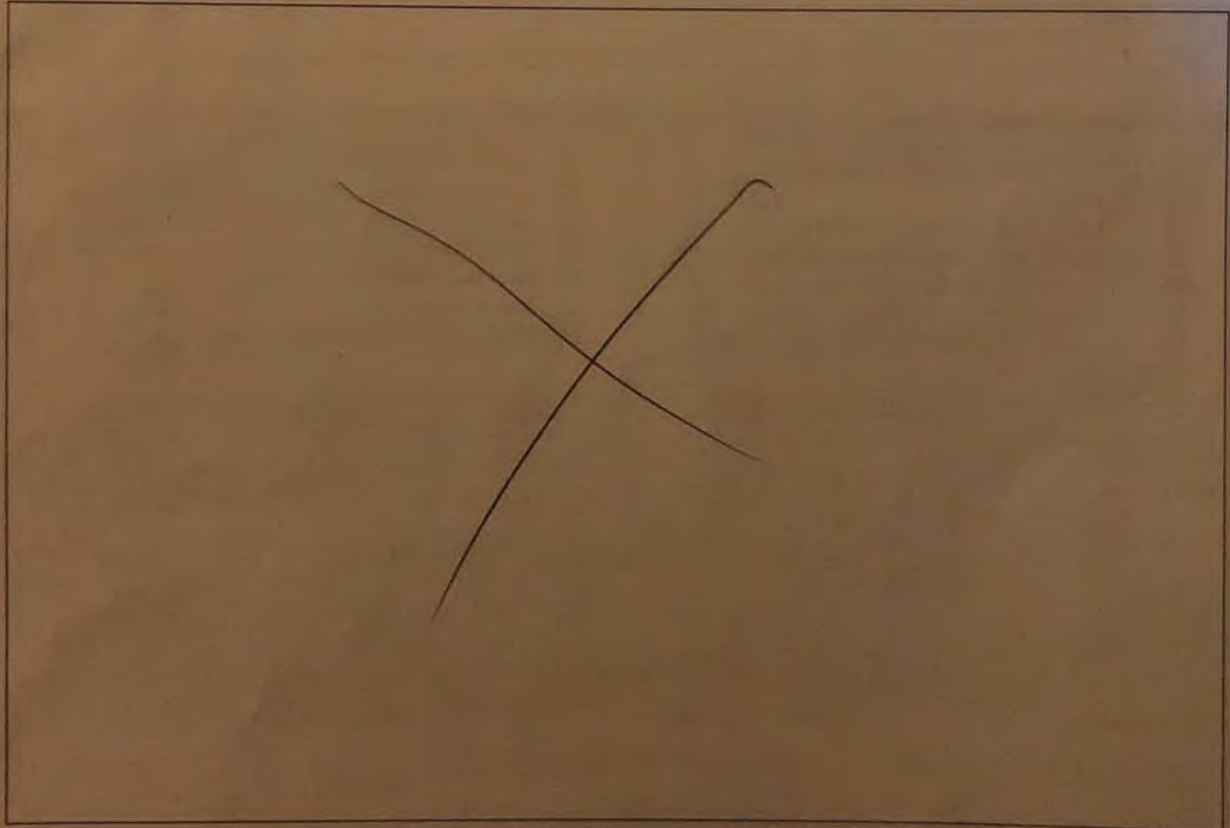
Max. depth:



Checklist of resources (if available):

|                                                            |                                                                      |                                              |
|------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography     | <input checked="" type="checkbox"/> Vegetation maps                  | <input checked="" type="checkbox"/> GPS unit |
| <input checked="" type="checkbox"/> Remotely-sensed images | <input checked="" type="checkbox"/> Soil maps                        | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps       | <input checked="" type="checkbox"/> Rainfall/precipitation data      | <input type="checkbox"/> Other studies:      |
| <input checked="" type="checkbox"/> Geologic maps          | <input checked="" type="checkbox"/> Existing delineation(s) for site |                                              |

Other drawings (plan view), notes:



Other forms related to this feature:  Yes  No

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)



OHWM DATA SHEET

Project: SSEP Date: 11/9/2020

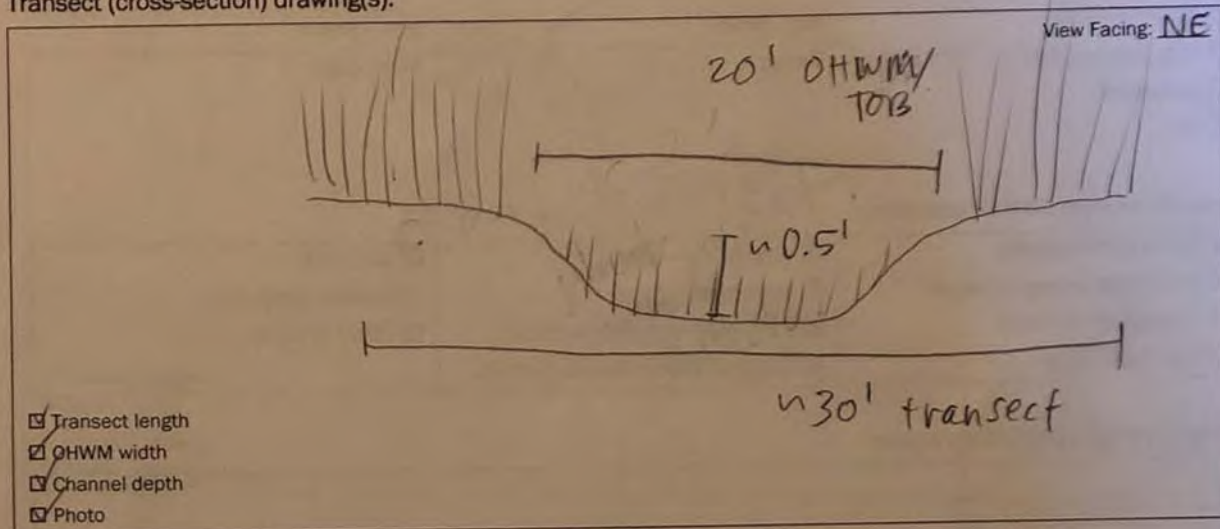
Investigator(s): AS + AC

Feature Name: ED-03-118

Site Location: ephemeral drainage that empties into VP-6 in the northern portion of project site

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

- |                                                                  |                                                               |
|------------------------------------------------------------------|---------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank      | <input type="checkbox"/> Sediment sorting                     |
| <input type="checkbox"/> Shelving                                | <input type="checkbox"/> Leaf litter disturbed or washed away |
| <input type="checkbox"/> Changes in the character of soil        | <input type="checkbox"/> Scour                                |
| <input type="checkbox"/> Destruction of terrestrial vegetation   | <input type="checkbox"/> Deposition                           |
| <input type="checkbox"/> Presence of litter and debris           | <input type="checkbox"/> Bed and banks                        |
| <input type="checkbox"/> Wracking                                | <input type="checkbox"/> Water staining                       |
| <input type="checkbox"/> Vegetation matted down, bent, or absent | <input checked="" type="checkbox"/> Change in plant community |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM | 100       |      |        |         |          |
| Below OHWM | 100       |      |        |         |          |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM |          |           | 60       |          |
| Below OHWM |          |           |          |          |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

| Upland Species: | Bank Species:                                                                    | Emergent Species:                   |
|-----------------|----------------------------------------------------------------------------------|-------------------------------------|
| Star thistle +  | Hordeum marinum<br>Festuca perennis<br>B. diandrus<br>Avena sp.<br>B. hordeaceas | Hordeum marinum<br>Festuca perennis |

**OHWM DATA SHEET**

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

*grazing*

**Hydrology:**

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Min. depth:

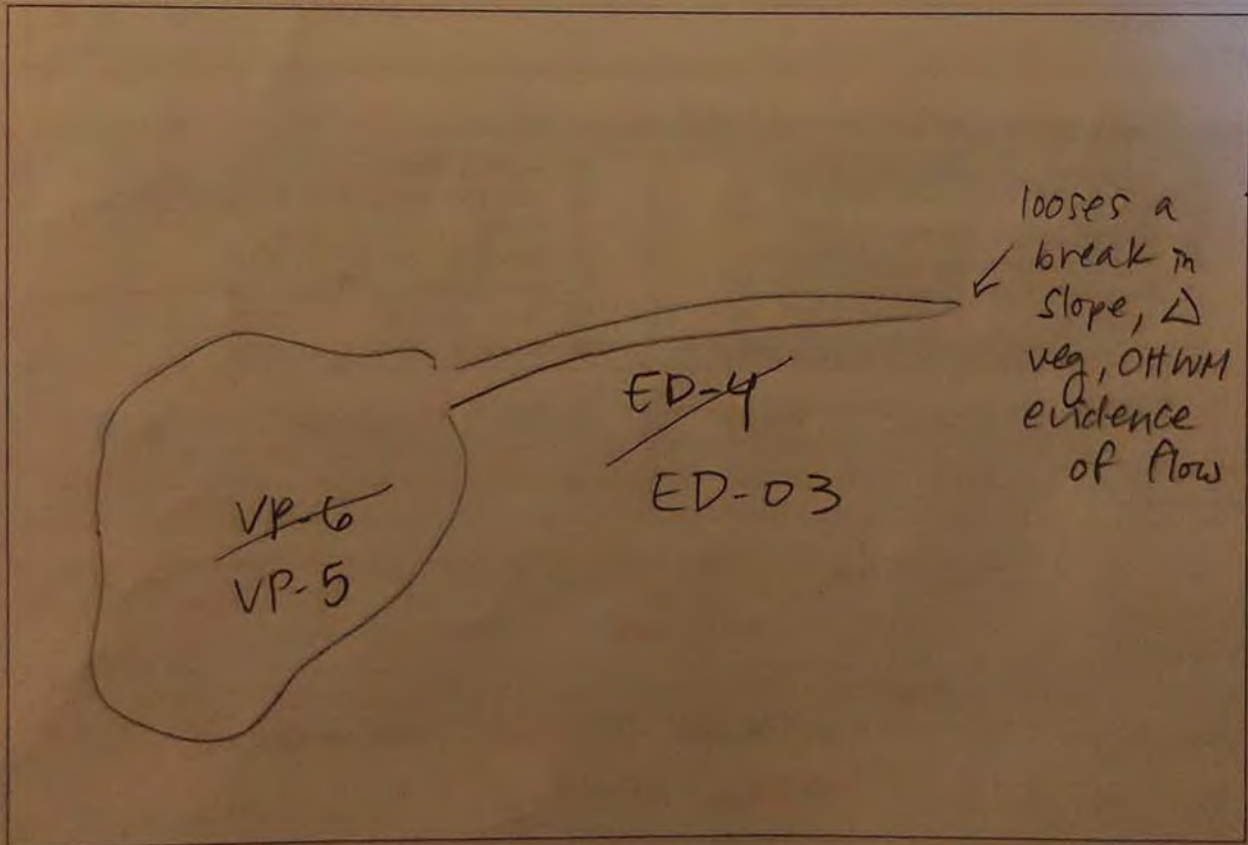
Temp:

Max. depth:

**Checklist of resources (if available):**

|                                                            |                                                                      |                                              |
|------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography     | <input checked="" type="checkbox"/> Vegetation maps                  | <input checked="" type="checkbox"/> GPS unit |
| <input checked="" type="checkbox"/> Remotely-sensed images | <input checked="" type="checkbox"/> Soil maps                        | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps       | <input checked="" type="checkbox"/> Rainfall/precipitation data      | <input type="checkbox"/> Other studies:      |
| <input checked="" type="checkbox"/> Geologic maps          | <input checked="" type="checkbox"/> Existing delineation(s) for site |                                              |

**Other drawings (plan view), notes:**



Other forms related to this feature:  Yes  No

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)



OHWM DATA SHEET

Project: SSEP

Date: 11/10/20

Investigator(s): Anna Godinho and Adam Crawford

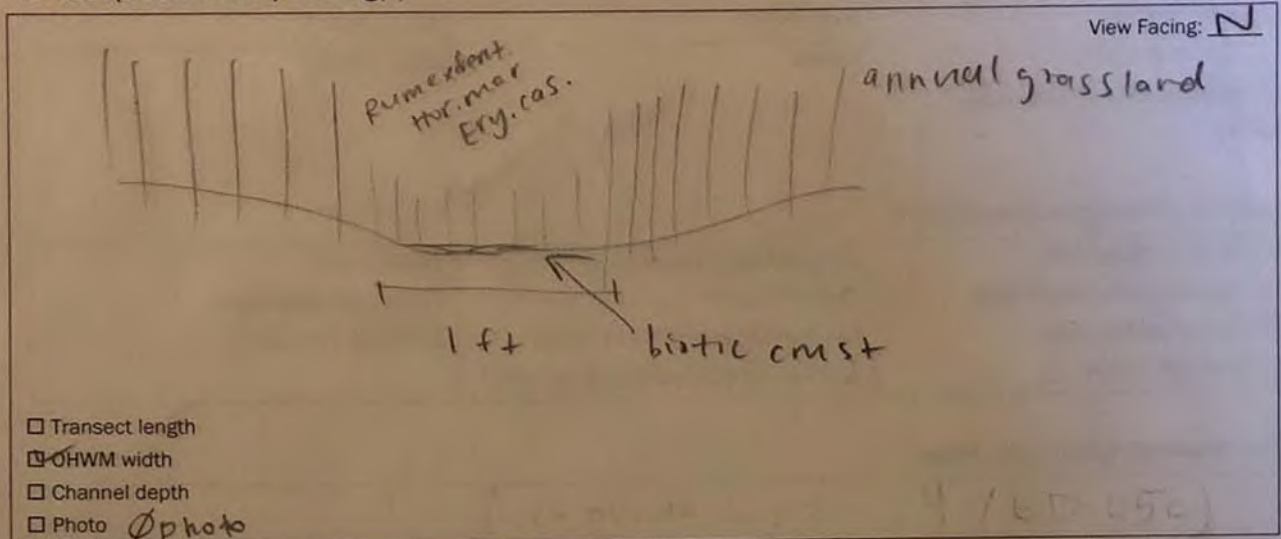
Feature Name: SWS-12-176

Site Location:

Feature potentially created by leaking overflowing cattle trough. Downstream of SW-34

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

|                                                                             |                                                               |
|-----------------------------------------------------------------------------|---------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank                 | <input type="checkbox"/> Sediment sorting                     |
| <input type="checkbox"/> Shelving                                           | <input type="checkbox"/> Leaf litter disturbed or washed away |
| <input type="checkbox"/> Changes in the character of soil                   | <input type="checkbox"/> Scour                                |
| <input type="checkbox"/> Destruction of terrestrial vegetation              | <input type="checkbox"/> Deposition                           |
| <input type="checkbox"/> Presence of litter and debris                      | <input type="checkbox"/> Bed and banks                        |
| <input type="checkbox"/> Wracking                                           | <input type="checkbox"/> Water staining                       |
| <input checked="" type="checkbox"/> Vegetation matted down, bent, or absent | <input checked="" type="checkbox"/> Change in plant community |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM | 100       | 0    | 0      | 0       | 0        |
| Below OHWM |           |      |        |         |          |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM | 0        | 0         | 100      | 0        |
| Below OHWM |          |           |          |          |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

|                        |                      |                          |
|------------------------|----------------------|--------------------------|
| <b>Upland Species:</b> | <b>Bank Species:</b> | <b>Emergent Species:</b> |
|                        |                      |                          |

# OHWM DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

## Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth: \_\_\_\_\_

Min. depth: \_\_\_\_\_

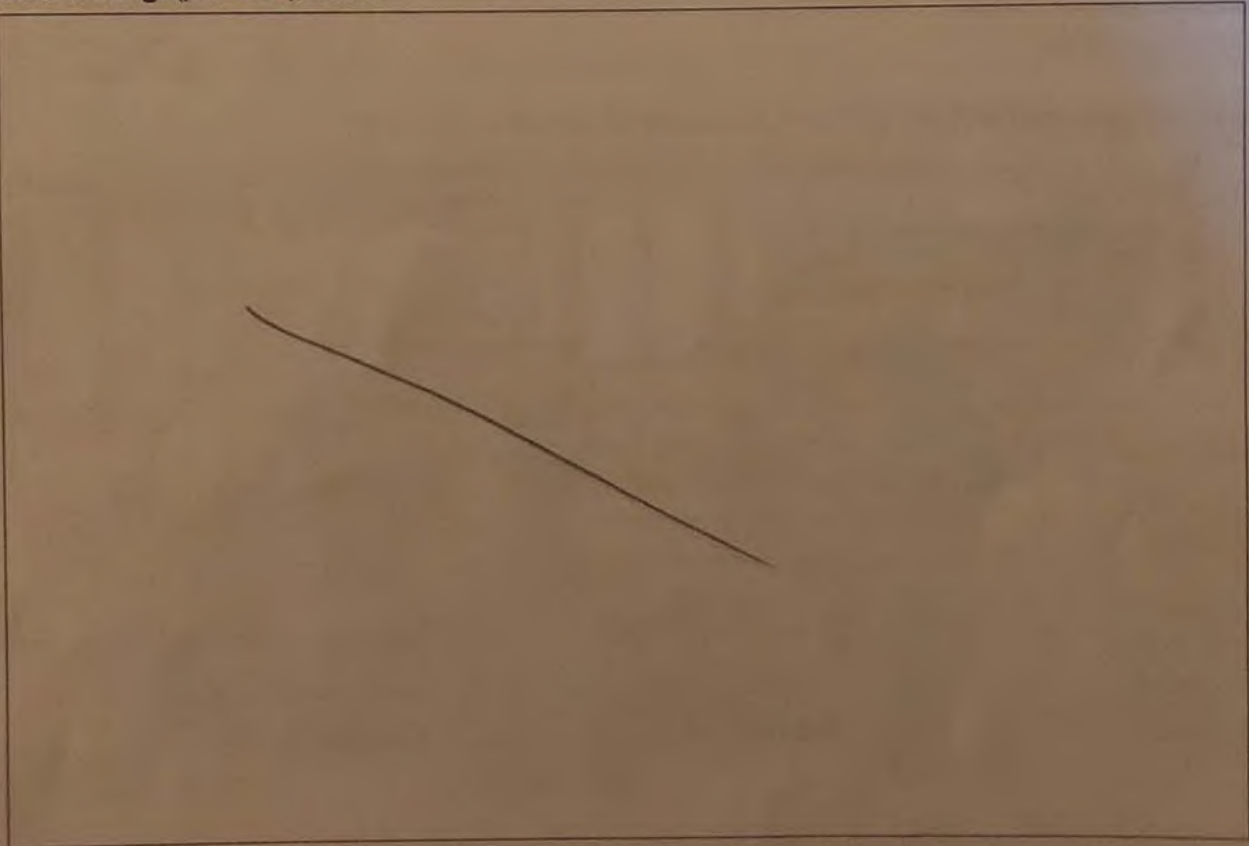
Temp: \_\_\_\_\_

Max. depth: \_\_\_\_\_

## Checklist of resources (if available):

- |                                                        |                                                                      |                                              |
|--------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography | <input type="checkbox"/> Vegetation maps                             | <input checked="" type="checkbox"/> GPS unit |
| <input type="checkbox"/> Remotely-sensed images        | <input checked="" type="checkbox"/> Soil maps                        | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps   | <input type="checkbox"/> Rainfall/precipitation data                 | <input type="checkbox"/> Other studies:      |
| <input type="checkbox"/> Geologic maps                 | <input checked="" type="checkbox"/> Existing delineation(s) for site |                                              |

## Other drawings (plan view), notes:



Other forms related to this feature:  Yes  No

~~ED-05~~ SWS-12-101, 131

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)



OHW DATA SHEET

Project: SSEP Date: 11/10/20

Investigator(s): AG + AC

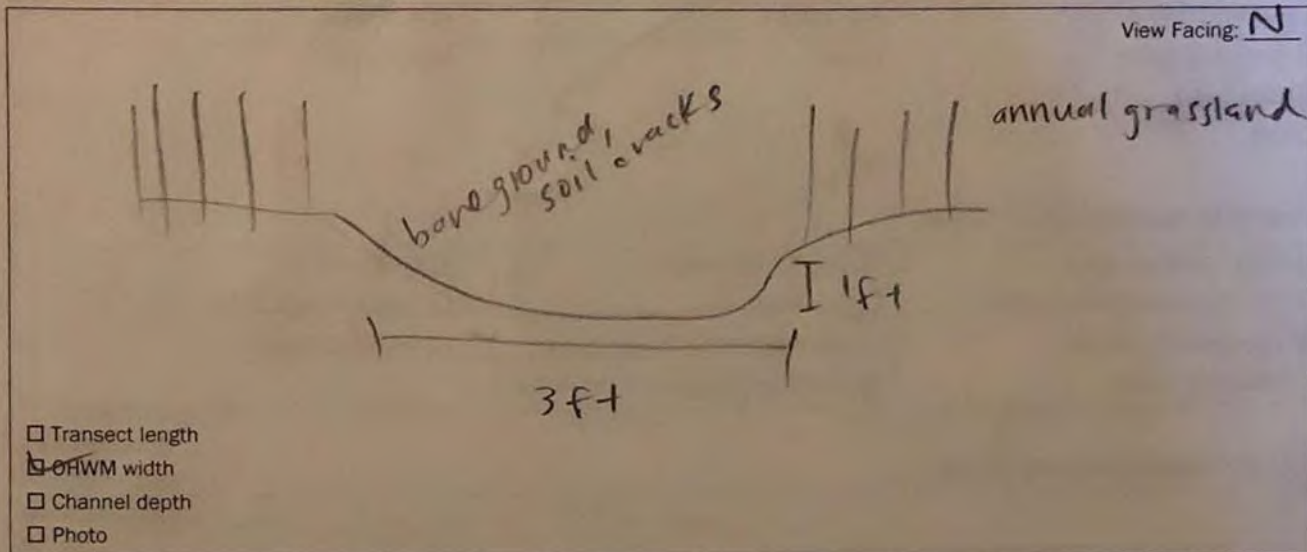
Feature Name:

SWS-12-131

Site Location:

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

- |                                                                             |                                                               |
|-----------------------------------------------------------------------------|---------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank                 | <input type="checkbox"/> Sediment sorting                     |
| <input type="checkbox"/> Shelving                                           | <input type="checkbox"/> Leaf litter disturbed or washed away |
| <input type="checkbox"/> Changes in the character of soil                   | <input type="checkbox"/> Scour                                |
| <input type="checkbox"/> Destruction of terrestrial vegetation              | <input type="checkbox"/> Deposition                           |
| <input type="checkbox"/> Presence of litter and debris                      | <input checked="" type="checkbox"/> Bed and banks             |
| <input type="checkbox"/> Wracking                                           | <input type="checkbox"/> Water staining                       |
| <input checked="" type="checkbox"/> Vegetation matted down, bent, or absent | <input type="checkbox"/> Change in plant community            |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM | 100       | 0    | 0      | 0       | 0        |
| Below OHWM | 90        | 0    | 0      | 10      | 0        |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM | 0        | 0         | 100      | 0        |
| Below OHWM | 0        | 0         | 10       | 90       |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

| Upland Species: | Bank Species: | Emergent Species:                             |
|-----------------|---------------|-----------------------------------------------|
|                 |               | Phyla nodiflora<br>Hordeum maritimum<br>Blmon |

OHWM DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Min. depth:

Temp:

Max. depth:

Checklist of resources (if available):

|                                                        |                                                                      |                                              |
|--------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography | <input type="checkbox"/> Vegetation maps                             | <input checked="" type="checkbox"/> GPS unit |
| <input type="checkbox"/> Remotely-sensed images        | <input checked="" type="checkbox"/> Soil maps                        | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps   | <input type="checkbox"/> Rainfall/precipitation data                 | <input type="checkbox"/> Other studies:      |
| <input type="checkbox"/> Geologic maps                 | <input checked="" type="checkbox"/> Existing delineation(s) for site |                                              |

Other drawings (plan view), notes:

Other forms related to this feature:  Yes  No

~~ED-05~~ SWS-12-101,176

Terrace, fringe, or floodplain wetland (wetland datasheet)

Low flow channel or other representative section (OHWM datasheet)



OHWM DATA SHEET

Project: SSEP Date: 11/10/20

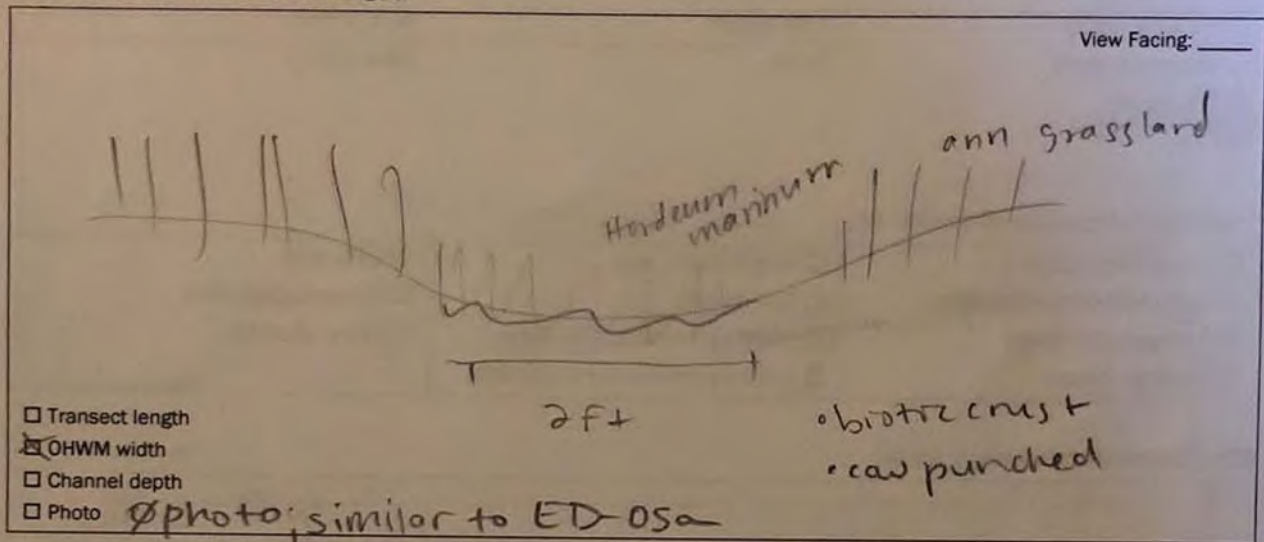
Investigator(s): AG+AC

Feature Name: SWS-12-101

Site Location:

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

- |                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank<br><input type="checkbox"/> Shelving<br><input type="checkbox"/> Changes in the character of soil<br><input type="checkbox"/> Destruction of terrestrial vegetation<br><input type="checkbox"/> Presence of litter and debris<br><input type="checkbox"/> Wracking<br><input checked="" type="checkbox"/> Vegetation matted down, bent, or absent | <input type="checkbox"/> Sediment sorting<br><input type="checkbox"/> Leaf litter disturbed or washed away<br><input type="checkbox"/> Scour<br><input type="checkbox"/> Deposition<br><input type="checkbox"/> Bed and banks<br><input type="checkbox"/> Water staining<br><input checked="" type="checkbox"/> Change in plant community |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM | 100       | 0    | 0      | 0       | 0        |
| Below OHWM | 0         | 0    | 0      | 0       | 0        |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM | 0        | 0         | 100      | 0        |
| Below OHWM | 0        | 0         | 50       | 50       |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

|                 |               |                   |
|-----------------|---------------|-------------------|
| Upland Species: | Bank Species: | Emergent Species: |
|                 |               |                   |

OHWL DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Min. depth:

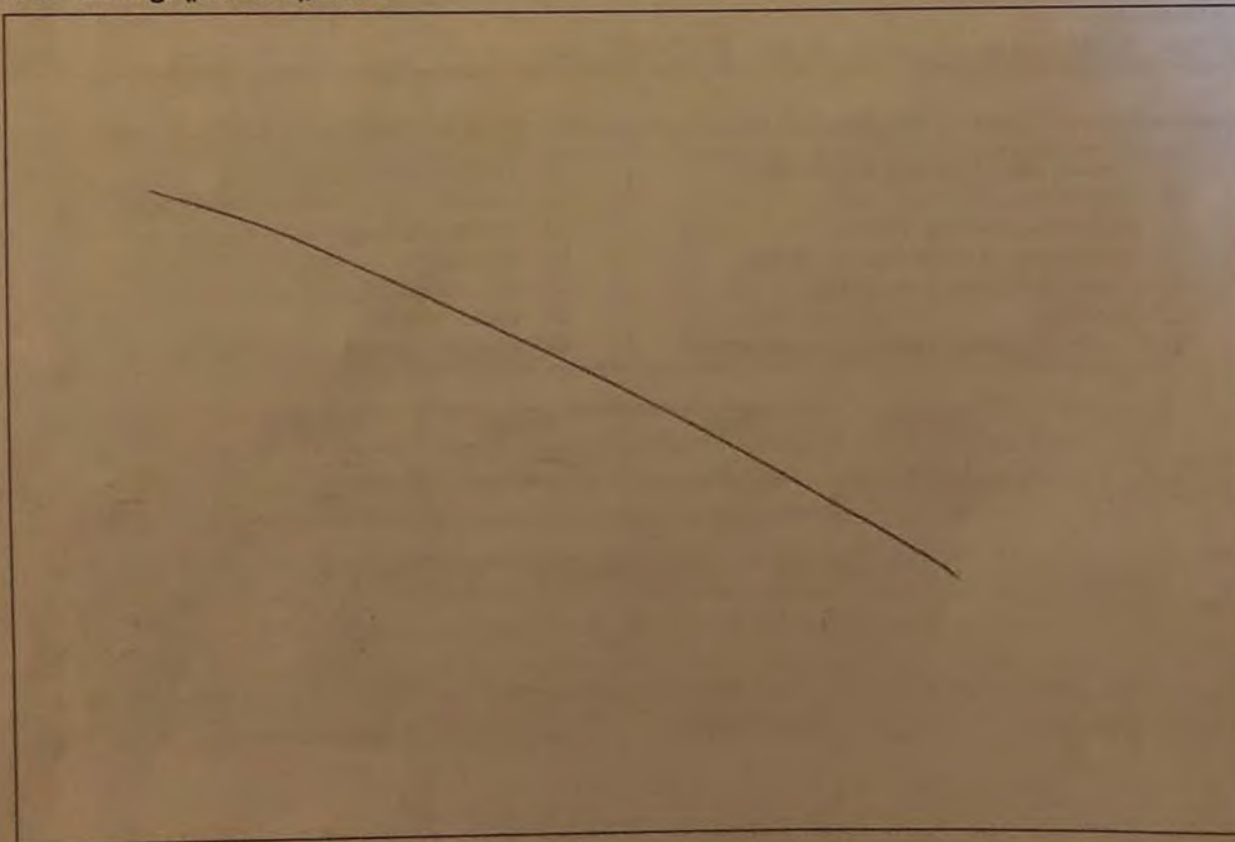
Temp:

Max. depth:

Checklist of resources (if available):

|                                                        |                                                                      |                                              |
|--------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography | <input type="checkbox"/> Vegetation maps                             | <input checked="" type="checkbox"/> GPS unit |
| <input type="checkbox"/> Remotely-sensed images        | <input checked="" type="checkbox"/> Soil maps                        | <input type="checkbox"/> Stream gage data    |
| <input type="checkbox"/> Topographic maps              | <input type="checkbox"/> Rainfall/precipitation data                 | <input type="checkbox"/> Other studies:      |
| <input type="checkbox"/> Geologic maps                 | <input checked="" type="checkbox"/> Existing delineation(s) for site |                                              |

Other drawings (plan view), notes:



Other forms related to this feature:  Yes  No

~~ED-05~~ SWS-12-176,131

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)



OHWM DATA SHEET

Project: SSEP Date: 11/11/2020

Investigator(s): LB, AS

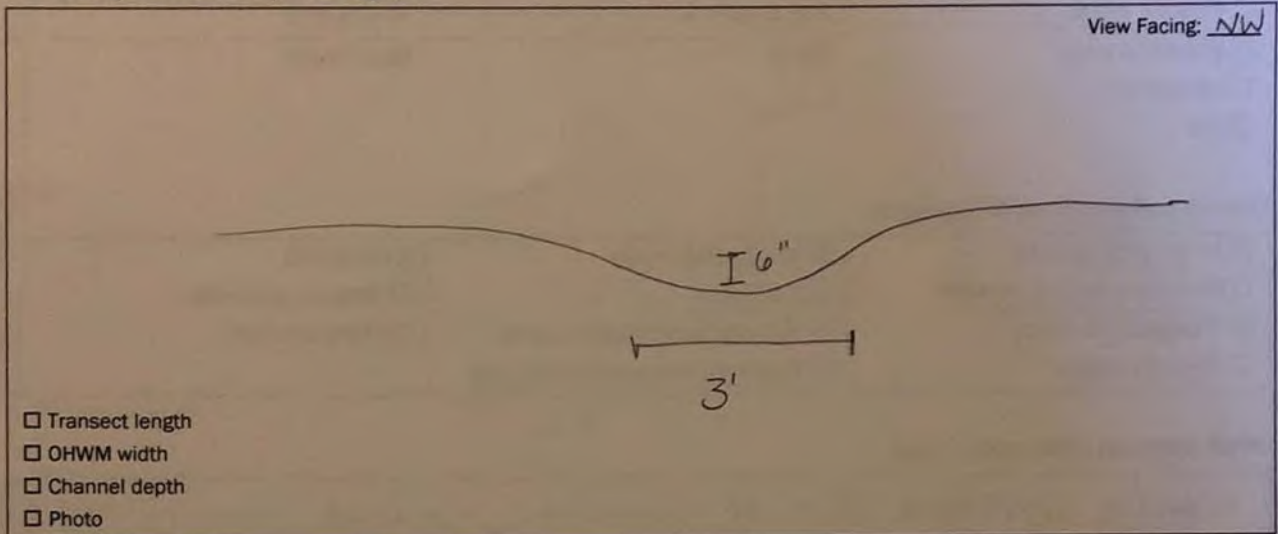
Feature Name: US-06-168

Site Location:

Top of hill in cattle paddock.

Feature Type:  Ephemeral  Intermittent  Perennial  Other Topographic feature

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

|                                                                  |                                                               |
|------------------------------------------------------------------|---------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank      | <input type="checkbox"/> Sediment sorting                     |
| <input type="checkbox"/> Shelving                                | <input type="checkbox"/> Leaf litter disturbed or washed away |
| <input type="checkbox"/> Changes in the character of soil        | <input type="checkbox"/> Scour                                |
| <input type="checkbox"/> Destruction of terrestrial vegetation   | <input type="checkbox"/> Deposition                           |
| <input type="checkbox"/> Presence of litter and debris           | <input checked="" type="checkbox"/> Bed and banks             |
| <input type="checkbox"/> Wracking                                | <input type="checkbox"/> Water staining                       |
| <input type="checkbox"/> Vegetation matted down, bent, or absent | <input type="checkbox"/> Change in plant community            |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM | 100       |      |        |         |          |
| Below OHWM | 100       |      |        |         |          |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM |          |           |          | 100      |
| Below OHWM |          |           |          | 100      |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

| Upland Species: | Bank Species: | Emergent Species: |
|-----------------|---------------|-------------------|
| <u>N/A</u>      | <u>N/A</u>    | <u>N/A</u>        |

# OHWM DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

Grazing, bare ground.

## Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth: \_\_\_\_\_

Min. depth: \_\_\_\_\_

Temp: \_\_\_\_\_

Max. depth: \_\_\_\_\_

## Checklist of resources (if available):

|                                                        |                                                           |                                              |
|--------------------------------------------------------|-----------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography | <input checked="" type="checkbox"/> Vegetation maps       | <input checked="" type="checkbox"/> GPS unit |
| <input type="checkbox"/> Remotely-sensed images        | <input type="checkbox"/> Soil maps                        | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps   | <input type="checkbox"/> Rainfall/precipitation data      | <input type="checkbox"/> Other studies:      |
| <input type="checkbox"/> Geologic maps                 | <input type="checkbox"/> Existing delineation(s) for site |                                              |

## Other drawings (plan view), notes:

Heavily disturbed due to grazing. Channel appears to be remnant swale from old water trough no longer in use.

Other forms related to this feature:  Yes  No

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)



OHWM DATA SHEET

Project: SSEP Date: 11/11/2020

Investigator(s): LB, AS

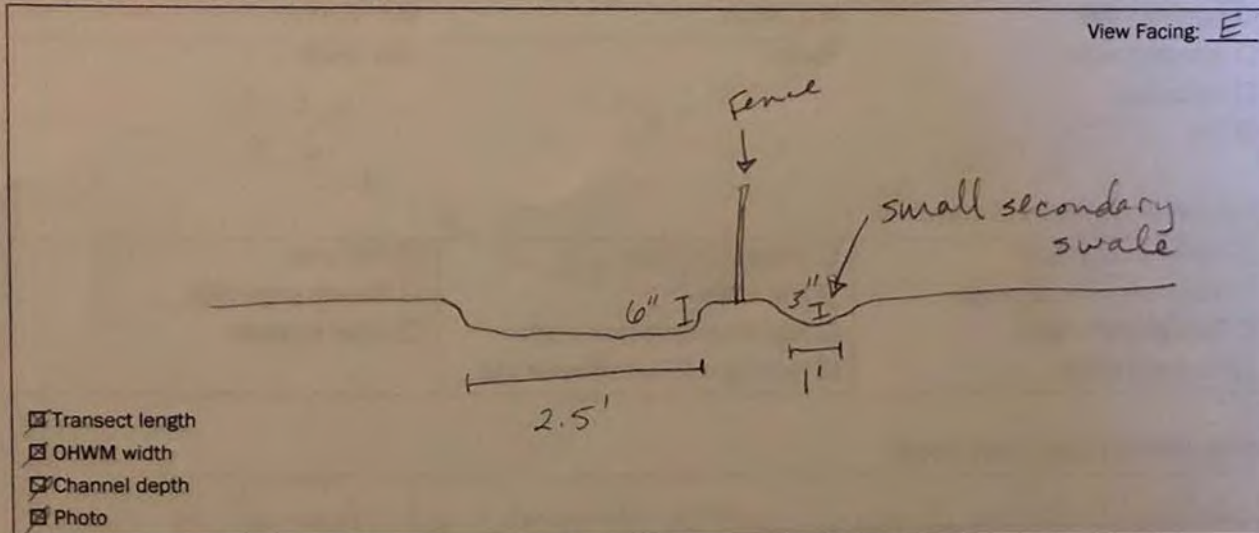
Feature Name: ED-04-137

Site Location:

Grazed cattle paddock

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

- |                                                                           |                                                                  |
|---------------------------------------------------------------------------|------------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank               | <input type="checkbox"/> Sediment sorting                        |
| <input type="checkbox"/> Shelving                                         | <input type="checkbox"/> Leaf litter disturbed or washed away    |
| <input type="checkbox"/> Changes in the character of soil                 | <input type="checkbox"/> Scour                                   |
| <input checked="" type="checkbox"/> Destruction of terrestrial vegetation | <input type="checkbox"/> Deposition <i>*cow punch in channel</i> |
| <input type="checkbox"/> Presence of litter and debris                    | <input checked="" type="checkbox"/> Bed and banks                |
| <input type="checkbox"/> Wracking                                         | <input type="checkbox"/> Water staining                          |
| <input type="checkbox"/> Vegetation matted down, bent, or absent          | <input type="checkbox"/> Change in plant community               |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM | 90        | 10   |        |         |          |
| Below OHWM | 98        |      | 2      |         |          |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM | 0        | 0         | 0        | 100      |
| Below OHWM |          |           | 10       | 90       |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

|                               |                                                                                                                        |                                                                                                   |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| <p><b>Upland Species:</b></p> | <p><b>Bank Species:</b></p> <p><i>Cynodon dactylon</i><br/> <i>Erodium cicutarium</i><br/> <i>Malva parviflora</i></p> | <p><b>Emergent Species:</b></p> <p><i>Cyperus eragrostis</i><br/> <i>Ranunculus scleratus</i></p> |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|

FIELD DATA SHEET

Wetland Identification (e.g., Cowardin, TSWI, etc.)  
 Date: \_\_\_\_\_  
 Location: \_\_\_\_\_

Wetland type  
 Wetland code  
 Wetland name  
 Wetland number  
 Wetland area  
 Wetland volume  
 Wetland depth  
 Wetland width  
 Wetland length  
 Wetland perimeter  
 Wetland elevation  
 Wetland slope  
 Wetland aspect  
 Wetland orientation  
 Wetland exposure  
 Wetland shading  
 Wetland windbreak  
 Wetland view  
 Wetland sound  
 Wetland smell  
 Wetland taste  
 Wetland touch  
 Wetland sight  
 Wetland sound  
 Wetland smell  
 Wetland taste  
 Wetland touch  
 Wetland sight

Checklist of resources (if available)

|                                                   |                                                         |                                           |
|---------------------------------------------------|---------------------------------------------------------|-------------------------------------------|
| <input type="checkbox"/> Aerial photography       | <input type="checkbox"/> Vegetation maps                | <input type="checkbox"/> GPS unit         |
| <input type="checkbox"/> Historical aerial photos | <input type="checkbox"/> Soil maps                      | <input type="checkbox"/> Stream gage data |
| <input type="checkbox"/> Topographic maps         | <input type="checkbox"/> Rainfall/precipitation data    | <input type="checkbox"/> Other studies    |
| <input type="checkbox"/> Wetland maps             | <input type="checkbox"/> Existing delineations for site |                                           |

Other details about this site:

note: leaking from cattle trough at head of sws.  
 also provides water to Pond 1.

Other forms related to this feature:  Yes  No

Terrace, fringe, or floodplain wetland (wetland datasheet)

Low flow channel or other representative section (OHWM datasheet)



## OHWM DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

*Cattle trampling and grazing*

**Hydrology:**

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth: \_\_\_\_\_

Min. depth: \_\_\_\_\_

Temp: \_\_\_\_\_

Max. depth: \_\_\_\_\_

**Checklist of resources (if available):**

|                                                                                                                                                                                                             |                                                                                                                                                                                                                |                                                                                                                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography<br><input type="checkbox"/> Remotely-sensed images<br><input checked="" type="checkbox"/> Topographic maps<br><input type="checkbox"/> Geologic maps | <input type="checkbox"/> Vegetation maps<br><input checked="" type="checkbox"/> Soil maps<br><input type="checkbox"/> Rainfall/precipitation data<br><input type="checkbox"/> Existing delineation(s) for site | <input checked="" type="checkbox"/> GPS unit<br><input type="checkbox"/> Stream gage data<br><input type="checkbox"/> Other studies: |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|

**Other drawings (plan view), notes:**

*Water leaking from cattle trough at head of SWS.  
SWS channels water to Pond-1.*

Other forms related to this feature:  Yes  No

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)

OHWM DATA SHEET

Project: SSEP Date: 11/11/2020

Investigator(s): LB, AS

Feature Name:

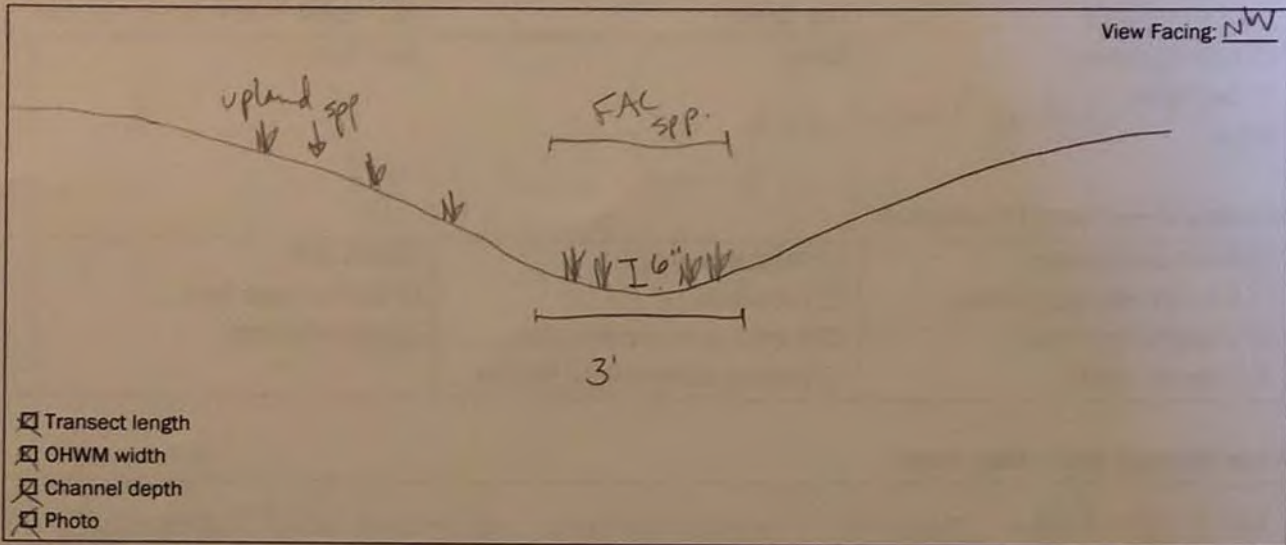
SWS-03-172

Site Location:

Hill above (east) of tilled ag field and Cosumnes River.

Feature Type:  Ephemeral  Intermittent  Perennial  Other swale in upland

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

|                                                                  |                                                               |
|------------------------------------------------------------------|---------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank      | <input type="checkbox"/> Sediment sorting                     |
| <input type="checkbox"/> Shelving                                | <input type="checkbox"/> Leaf litter disturbed or washed away |
| <input type="checkbox"/> Changes in the character of soil        | <input type="checkbox"/> Scour                                |
| <input type="checkbox"/> Destruction of terrestrial vegetation   | <input type="checkbox"/> Deposition                           |
| <input type="checkbox"/> Presence of litter and debris           | <input type="checkbox"/> Bed and banks                        |
| <input type="checkbox"/> Wracking                                | <input type="checkbox"/> Water staining                       |
| <input type="checkbox"/> Vegetation matted down, bent, or absent | <input checked="" type="checkbox"/> Change in plant community |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM | 100       |      |        |         |          |
| Below OHWM | 100       |      |        |         |          |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM |          |           | 95       | 5        |
| Below OHWM |          |           | 100      |          |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

| Upland Species:                             | Bank Species:                     | Emergent Species: |
|---------------------------------------------|-----------------------------------|-------------------|
| Hor-mar<br>Censol<br>Lac ser<br>Ely cap-med | Hor-mar<br>Hor-mar<br>Festuca per | Fesper<br>Hor-mar |



# OHWM DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

### Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Min. depth:

Temp:

Max. depth:

### Checklist of resources (if available):

|                                                        |                                                           |                                              |
|--------------------------------------------------------|-----------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography | <input type="checkbox"/> Vegetation maps                  | <input checked="" type="checkbox"/> GPS unit |
| <input type="checkbox"/> Remotely-sensed images        | <input type="checkbox"/> Soil maps                        | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps   | <input type="checkbox"/> Rainfall/precipitation data      | <input type="checkbox"/> Other studies:      |
| <input type="checkbox"/> Geologic maps                 | <input type="checkbox"/> Existing delineation(s) for site |                                              |

### Other drawings (plan view), notes:

very gradual swale / topographic depression between two hills. Flows fan out @ base of hill to west, no more swale or wetland.

Other forms related to this feature:  Yes  No

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)

OHW DATA SHEET

Project: SSEP Date: 11/11/2020

Investigator(s): LB + AS

Feature Name:

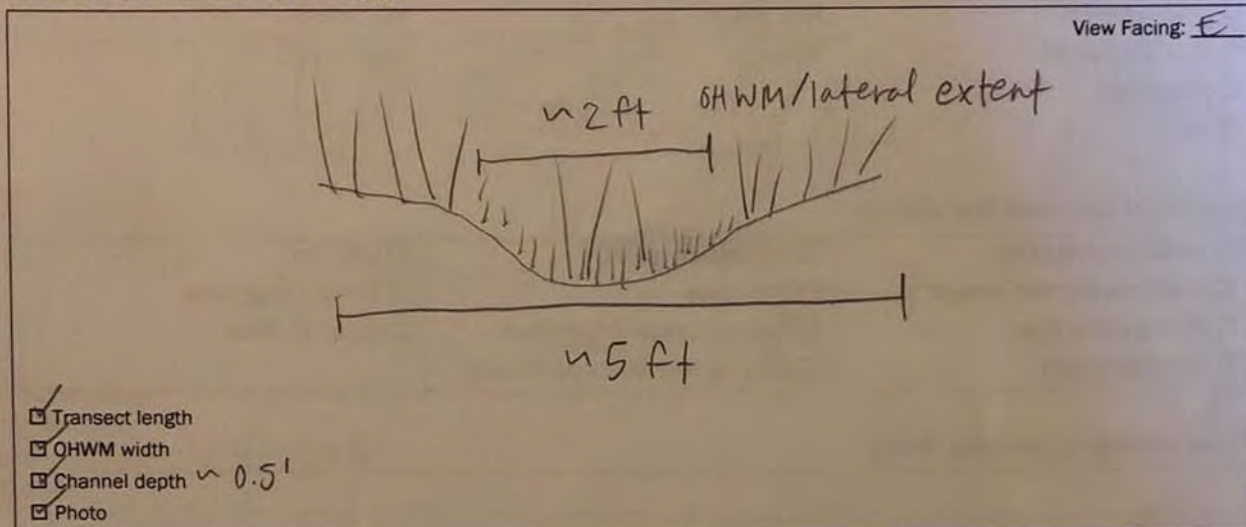
SWS-13-138

Site Location:

Feature is just west of Meiss Road in the middle-eastern portion of project site.

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp ( $>60^\circ$ )  Moderate ( $30-60^\circ$ )  Gentle ( $<30^\circ$ )

|                                                                  |                                                                            |
|------------------------------------------------------------------|----------------------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank      | <input type="checkbox"/> Sediment sorting                                  |
| <input type="checkbox"/> Shelving                                | <input type="checkbox"/> Leaf litter disturbed or washed away              |
| <input type="checkbox"/> Changes in the character of soil        | <input type="checkbox"/> Scour                                             |
| <input type="checkbox"/> Destruction of terrestrial vegetation   | <input type="checkbox"/> Deposition                                        |
| <input type="checkbox"/> Presence of litter and debris           | <input type="checkbox"/> Bed and banks                                     |
| <input type="checkbox"/> Wracking                                | <input type="checkbox"/> Water staining                                    |
| <input type="checkbox"/> Vegetation matted down, bent, or absent | <input checked="" type="checkbox"/> Change in plant community <i>cover</i> |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM | 100       | 0    | 0      | 0       | 0        |
| Below OHWM | 100       | 0    | 0      | 0       | 0        |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM | 0        | 0         | 45       | 55       |
| Below OHWM | 0        | 0         | 30       | 70       |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

| Upland Species:                                                                                              | Bank Species: | Emergent Species:                                          |
|--------------------------------------------------------------------------------------------------------------|---------------|------------------------------------------------------------|
| <p><i>Halocarpha virgata</i> - }<br/> <i>Bromus hordeaceus</i> } Same<br/>                     grassland</p> |               | <p><i>Hordeum marinum</i><br/> <i>Festuca perennis</i></p> |



OHWM DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

cattle use of drainage

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Min. depth:

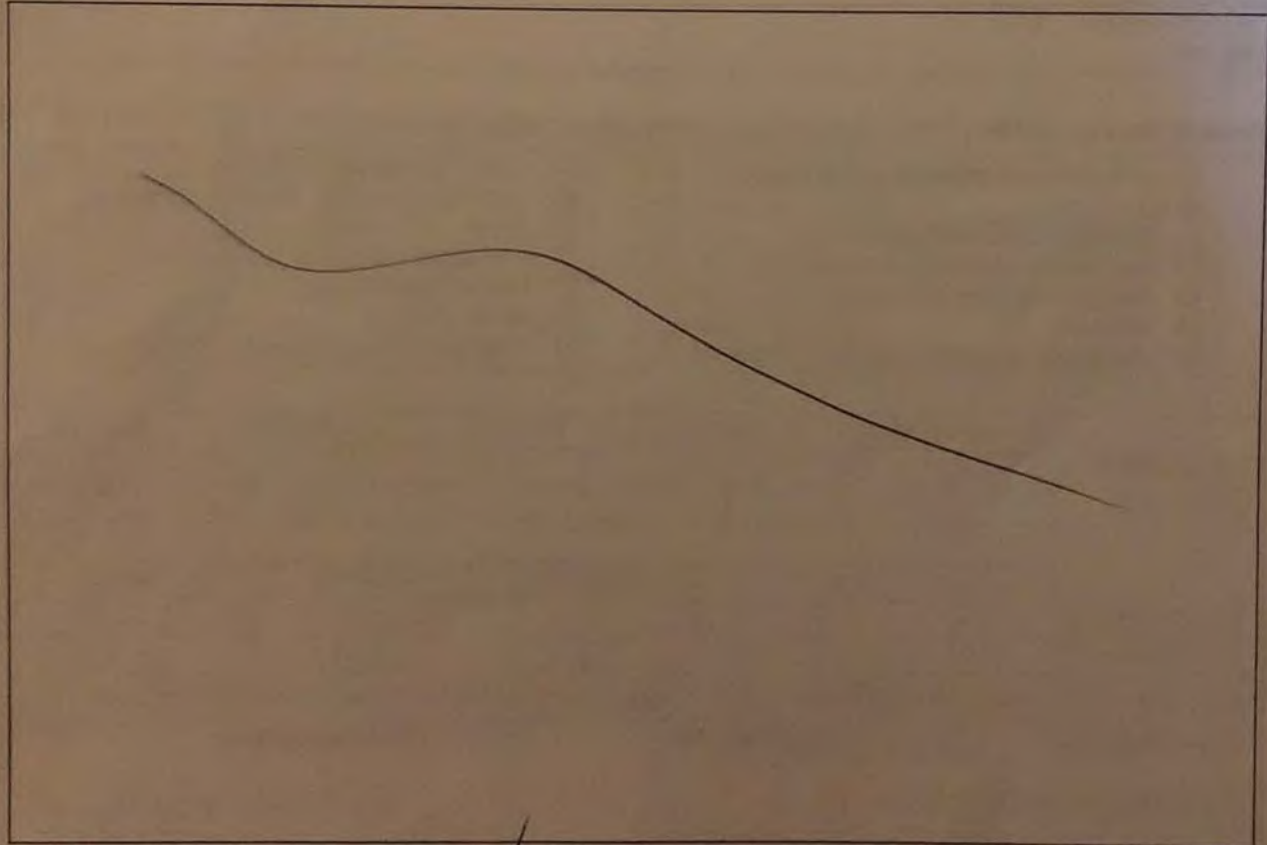
Temp:

Max. depth:

Checklist of resources (if available):

|                                                            |                                                                      |                                              |
|------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography     | <input checked="" type="checkbox"/> Vegetation maps                  | <input checked="" type="checkbox"/> GPS unit |
| <input checked="" type="checkbox"/> Remotely-sensed images | <input checked="" type="checkbox"/> Soil maps                        | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps       | <input checked="" type="checkbox"/> Rainfall/precipitation data      | <input type="checkbox"/> Other studies:      |
| <input checked="" type="checkbox"/> Geologic maps          | <input checked="" type="checkbox"/> Existing delineation(s) for site |                                              |

Other drawings (plan view), notes:



Other forms related to this feature:  Yes  No

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)

OHWM DATA SHEET

Project: SSEP Date: 11/11/2020

Investigator(s): LR + AS

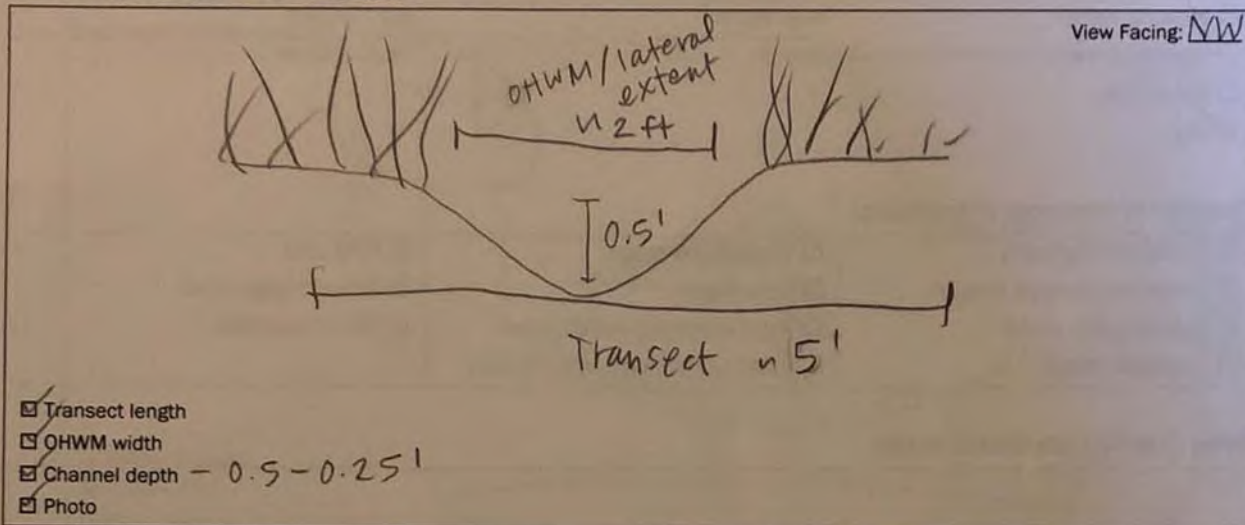
Feature Name: SWS-14-139

Site Location:

similar to ED-6, but to the north.

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

- |                                                                  |                                                                       |
|------------------------------------------------------------------|-----------------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank      | <input type="checkbox"/> Sediment sorting                             |
| <input type="checkbox"/> Shelving                                | <input type="checkbox"/> Leaf litter disturbed or washed away         |
| <input type="checkbox"/> Changes in the character of soil        | <input type="checkbox"/> Scour                                        |
| <input type="checkbox"/> Destruction of terrestrial vegetation   | <input type="checkbox"/> Deposition                                   |
| <input type="checkbox"/> Presence of litter and debris           | <input type="checkbox"/> Bed and banks                                |
| <input type="checkbox"/> Wracking                                | <input type="checkbox"/> Water staining                               |
| <input type="checkbox"/> Vegetation matted down, bent, or absent | <input checked="" type="checkbox"/> Change in plant community + cover |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM | 100       | 0    | 0      | 0       | 0        |
| Below OHWM | 100       | 0    | 0      | 0       | 0        |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM | 0        | 0         | 45       | 55       |
| Below OHWM | 0        | 0         | 30       | 70       |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

| Upland Species: | Bank Species: | Emergent Species: |
|-----------------|---------------|-------------------|
|                 | same as ED-6  |                   |



OHW DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

same as ED-6

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Min. depth:

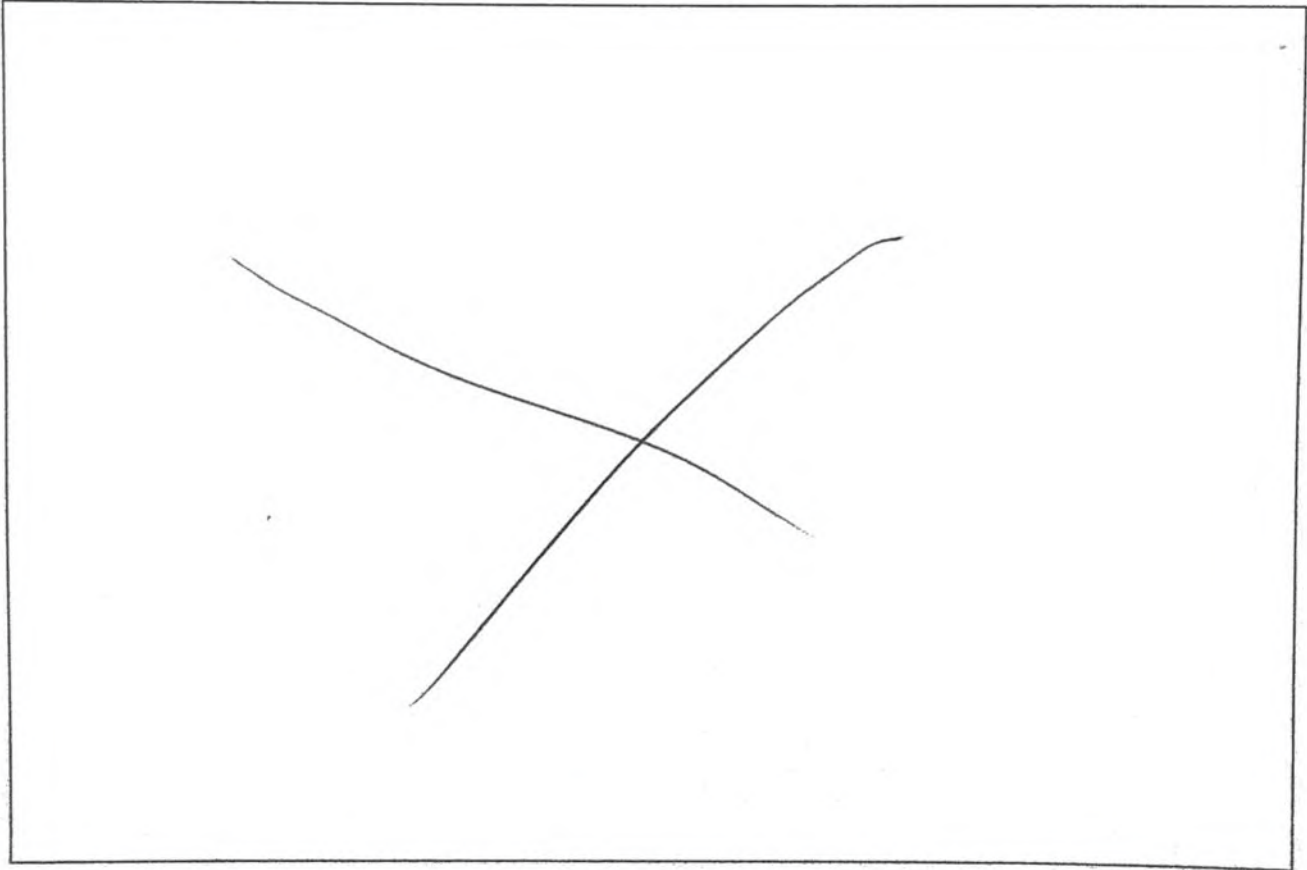
Temp:

Max. depth:

Checklist of resources (if available):

|                                                            |                                                                      |                                              |
|------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography     | <input checked="" type="checkbox"/> Vegetation maps                  | <input checked="" type="checkbox"/> GPS unit |
| <input checked="" type="checkbox"/> Remotely-sensed images | <input checked="" type="checkbox"/> Soil maps                        | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps       | <input checked="" type="checkbox"/> Rainfall/precipitation data      | <input type="checkbox"/> Other studies:      |
| <input checked="" type="checkbox"/> Geologic maps          | <input checked="" type="checkbox"/> Existing delineation(s) for site |                                              |

Other drawings (plan view), notes:



Other forms related to this feature:  Yes  No

Terrace, fringe, or floodplain wetland (wetland datasheet)

Low flow channel or other representative section (OHWM datasheet)

OHWM DATA SHEET

Project: SSEP Date: 11/11/20

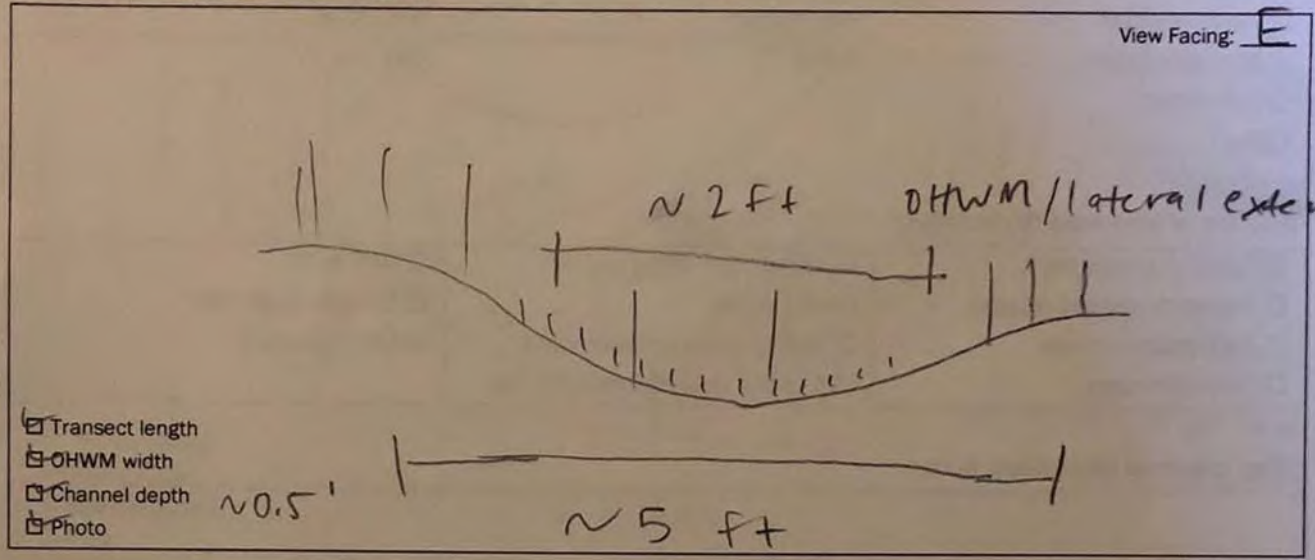
Investigator(s): AS+LB

Feature Name: SWS-15-177

Site Location: Feature is south of Meiss Rd in the middle-eastern portion of project site

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

- |                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank<br><input type="checkbox"/> Shelving<br><input type="checkbox"/> Changes in the character of soil<br><input type="checkbox"/> Destruction of terrestrial vegetation<br><input type="checkbox"/> Presence of litter and debris<br><input type="checkbox"/> Wracking<br><input type="checkbox"/> Vegetation matted down, bent, or absent | <input type="checkbox"/> Sediment sorting<br><input type="checkbox"/> Leaf litter disturbed or washed away<br><input type="checkbox"/> Scour<br><input type="checkbox"/> Deposition<br><input type="checkbox"/> Bed and banks<br><input type="checkbox"/> Water staining<br><input checked="" type="checkbox"/> Change in plant community and/or cover |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|            | Clay/Silt  | Sand     | Gravel   | Cobbles  | Boulders |
|------------|------------|----------|----------|----------|----------|
| Above OHWM | <u>100</u> | <u>0</u> | <u>0</u> | <u>0</u> | <u>0</u> |
| Below OHWM | <u>100</u> | <u>0</u> | <u>0</u> | <u>0</u> | <u>0</u> |

|            | Tree (%) | Shrub (%) | Herb (%)  | Bare (%)  |
|------------|----------|-----------|-----------|-----------|
| Above OHWM | <u>0</u> | <u>0</u>  | <u>45</u> | <u>55</u> |
| Below OHWM | <u>0</u> | <u>0</u>  | <u>30</u> | <u>70</u> |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

| Upland Species: | Bank Species:               | Emergent Species: |
|-----------------|-----------------------------|-------------------|
|                 | <u>Same as ED-06 SWS-13</u> |                   |



# OHWM DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

cattle use of drainage

## Hydrology:

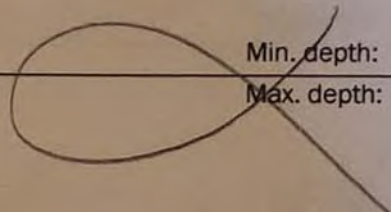
- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Min. depth:

Temp:

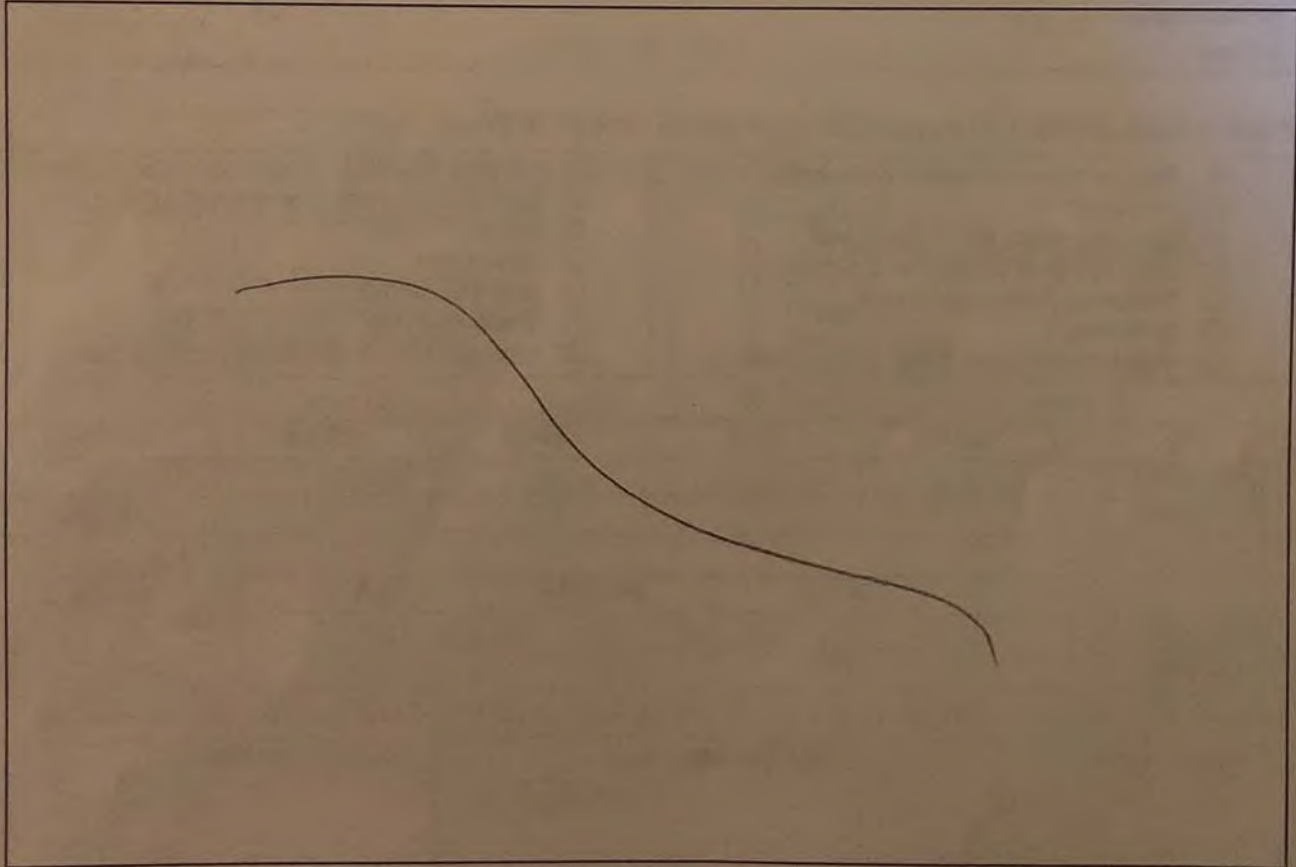
Max. depth:



## Checklist of resources (if available):

|                                                        |                                                                      |                                              |
|--------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography | <input type="checkbox"/> Vegetation maps                             | <input checked="" type="checkbox"/> GPS unit |
| <input type="checkbox"/> Remotely-sensed images        | <input checked="" type="checkbox"/> Soil maps                        | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps   | <input type="checkbox"/> Rainfall/precipitation data                 | <input type="checkbox"/> Other studies:      |
| <input type="checkbox"/> Geologic maps                 | <input checked="" type="checkbox"/> Existing delineation(s) for site |                                              |

## Other drawings (plan view), notes:



Other forms related to this feature:  Yes  No

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)

OHWM DATA SHEET

Project: SSEP Date: 11/12/20

Investigator(s): Anna G. + Allie G.

Feature Name

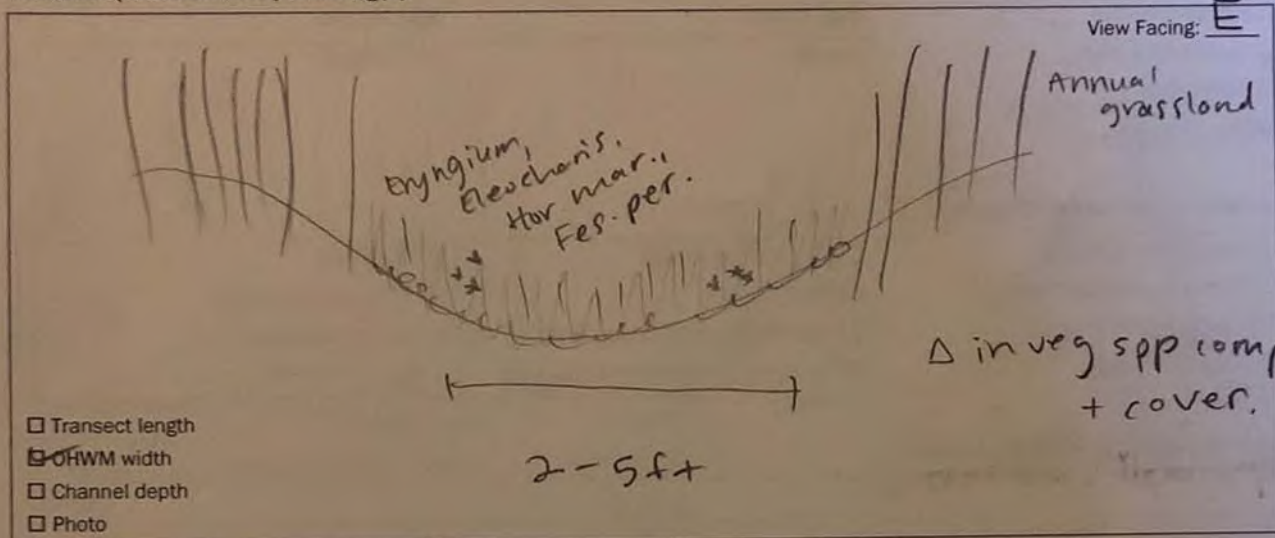
SWS-04-151

Site Location:

within swale complex west/upland of basin.  
Drains into SW-37

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

- |                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank<br><input type="checkbox"/> Shelving<br><input type="checkbox"/> Changes in the character of soil<br><input type="checkbox"/> Destruction of terrestrial vegetation<br><input type="checkbox"/> Presence of litter and debris<br><input type="checkbox"/> Wracking<br><input checked="" type="checkbox"/> Vegetation matted down, bent, or absent | <input type="checkbox"/> Sediment sorting<br><input type="checkbox"/> Leaf litter disturbed or washed away<br><input type="checkbox"/> Scour<br><input type="checkbox"/> Deposition<br><input type="checkbox"/> Bed and banks<br><input type="checkbox"/> Water staining<br><input checked="" type="checkbox"/> Change in plant community |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM | 100       | 0    | 0      | 0       | 0        |
| Below OHWM |           |      |        |         |          |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM | 0        | 0         | 100      | 0        |
| Below OHWM |          |           | 80       | 20       |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

|                                                                                                                                                                                                                  |                             |                                                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Upland Species:</b></p> <p>Bro. hor.<br/>                 Holocarpha sp.<br/>                 Matricaria sp.<br/>                 Hypochaeris sp.</p> <p>* late season upland veg growing within swale</p> | <p><b>Bank Species:</b></p> | <p><b>Emergent Species:</b></p> <p>Eleocharis macrostachya<br/>                 Ery. cas.<br/>                 Phyt. nod.<br/>                 Fes. Per.</p> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|



OHWL DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Min. depth:

Temp:

Max. depth:

Checklist of resources (if available):

|                                                        |                                                                      |                                              |
|--------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography | <input type="checkbox"/> Vegetation maps                             | <input checked="" type="checkbox"/> GPS unit |
| <input type="checkbox"/> Remotely-sensed images        | <input checked="" type="checkbox"/> Soil maps                        | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps   | <input type="checkbox"/> Rainfall/precipitation data                 | <input type="checkbox"/> Other studies:      |
| <input type="checkbox"/> Geologic maps                 | <input checked="" type="checkbox"/> Existing delineation(s) for site |                                              |

Other drawings (plan view), notes:

• linear swale contains topographic depressions throughout w/ bare ground and cow hoof punches

Other forms related to this feature:  Yes  No

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)

Drains into SW-37

OHWM DATA SHEET

Project: \_\_\_\_\_ Date: 11/12/20

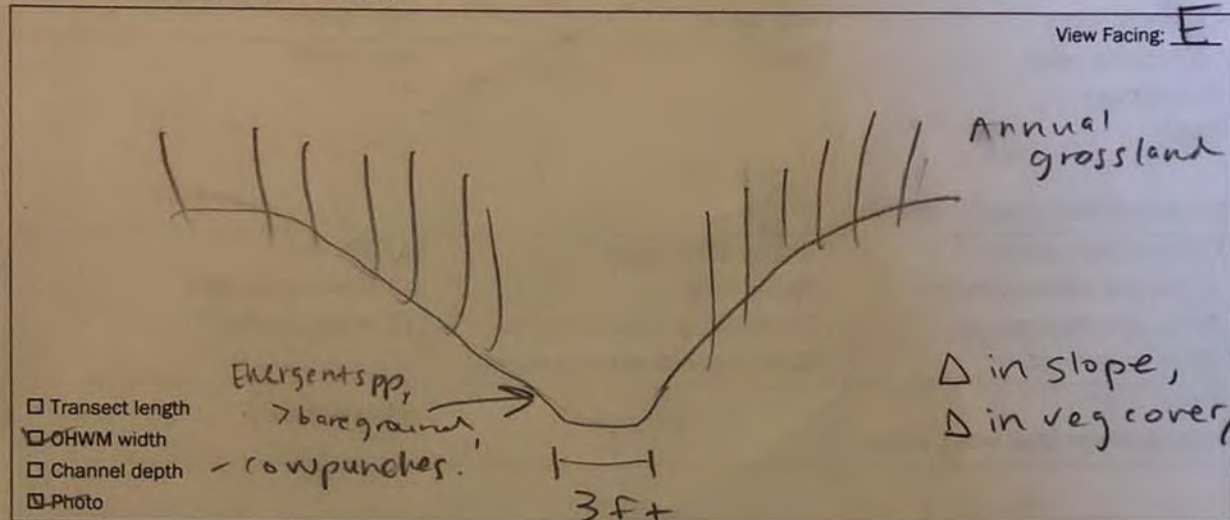
Investigator(s): AG/AS

Feature Name: SWS-04-152

Site Location:

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

|                                                                             |                                                               |
|-----------------------------------------------------------------------------|---------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank                 | <input type="checkbox"/> Sediment sorting                     |
| <input type="checkbox"/> Shelving                                           | <input type="checkbox"/> Leaf litter disturbed or washed away |
| <input type="checkbox"/> Changes in the character of soil                   | <input type="checkbox"/> Scour                                |
| <input type="checkbox"/> Destruction of terrestrial vegetation              | <input type="checkbox"/> Deposition                           |
| <input type="checkbox"/> Presence of litter and debris                      | <input checked="" type="checkbox"/> Bed and banks             |
| <input type="checkbox"/> Wracking                                           | <input type="checkbox"/> Water staining                       |
| <input checked="" type="checkbox"/> Vegetation matted down, bent, or absent | <input checked="" type="checkbox"/> Change in plant community |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM |           |      |        |         |          |
| Below OHWM | 100       | 0    | 0      | 0       | 0        |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM | 0        | 0         | 100      | 0        |
| Below OHWM | 0        | 0         | 60       | 40       |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

| Upland Species:                                      | Bank Species: | Emergent Species:                   |
|------------------------------------------------------|---------------|-------------------------------------|
| Bro. hor.<br>Holocarpha.<br>Thichostemma lanceolatum | Fes. per.     | Dry. cas.<br>Hor. mar.<br>Rum. den. |



OHWM DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

Handwritten line across the box.

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Min. depth:

Temp:

Max. depth:

Checklist of resources (if available):

|                                                        |                                                                      |                                              |
|--------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography | <input type="checkbox"/> Vegetation maps                             | <input checked="" type="checkbox"/> GPS unit |
| <input type="checkbox"/> Remotely-sensed images        | <input checked="" type="checkbox"/> Soil maps                        | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps   | <input type="checkbox"/> Rainfall/precipitation data                 | <input type="checkbox"/> Other studies:      |
| <input type="checkbox"/> Geologic maps                 | <input checked="" type="checkbox"/> Existing delineation(s) for site |                                              |

Other drawings (plan view), notes:

Large empty box with a handwritten diagonal line.

Other forms related to this feature:  Yes  No T1

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)

OHWM DATA SHEET

Project: \_\_\_\_\_ Date: 11/12/20

Investigator(s): AG+AS

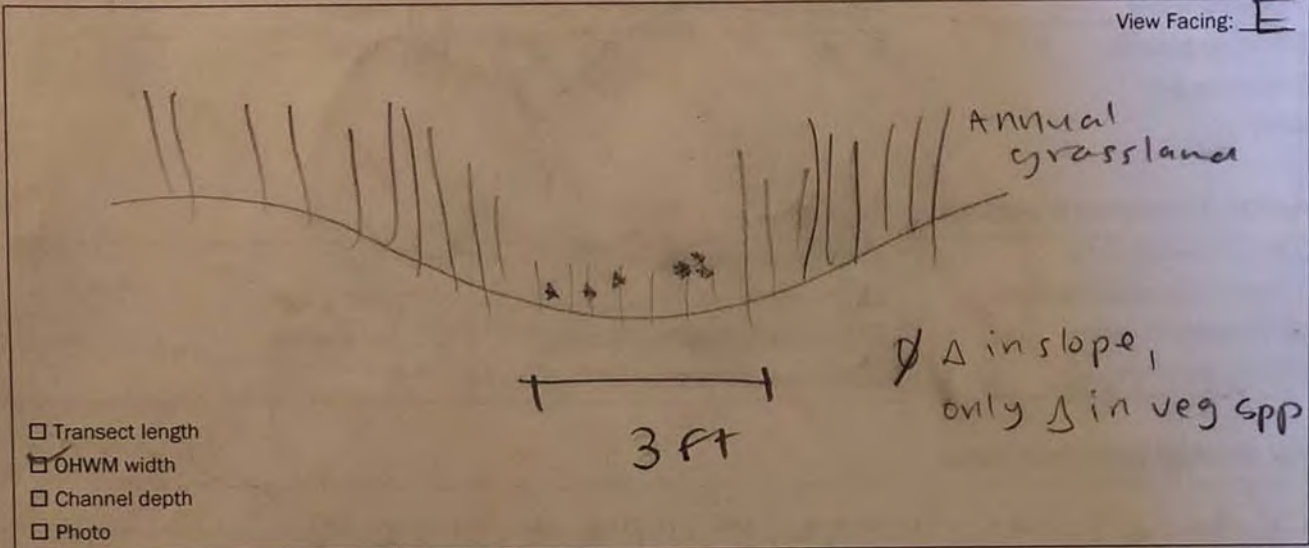
Feature Name: SWS-04-154

Site Location:

upslope from SW-37

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

|                                                                  |                                                               |
|------------------------------------------------------------------|---------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank      | <input type="checkbox"/> Sediment sorting                     |
| <input type="checkbox"/> Shelving                                | <input type="checkbox"/> Leaf litter disturbed or washed away |
| <input type="checkbox"/> Changes in the character of soil        | <input type="checkbox"/> Scour                                |
| <input type="checkbox"/> Destruction of terrestrial vegetation   | <input type="checkbox"/> Deposition                           |
| <input type="checkbox"/> Presence of litter and debris           | <input type="checkbox"/> Bed and banks                        |
| <input type="checkbox"/> Wracking                                | <input type="checkbox"/> Water staining                       |
| <input type="checkbox"/> Vegetation matted down, bent, or absent | <input checked="" type="checkbox"/> Change in plant community |

|            | Clay/Silt  | Sand     | Gravel   | Cobbles  | Boulders |
|------------|------------|----------|----------|----------|----------|
| Above OHWM | <u>100</u> | <u>0</u> | <u>0</u> | <u>0</u> | <u>0</u> |
| Below OHWM | <u>100</u> | <u>0</u> | <u>0</u> | <u>0</u> | <u>0</u> |

|            | Tree (%) | Shrub (%) | Herb (%)   | Bare (%) |
|------------|----------|-----------|------------|----------|
| Above OHWM | <u>0</u> | <u>0</u>  | <u>100</u> | <u>0</u> |
| Below OHWM | <u>0</u> | <u>0</u>  | <u>100</u> | <u>0</u> |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

| Upland Species:                                      | Bank Species: | Emergent Species:                                                           |
|------------------------------------------------------|---------------|-----------------------------------------------------------------------------|
| <u>Bro. hor.</u><br><u>Ely cap-med</u><br><u>Hol</u> |               | <u>Ery. ras.</u><br><u>Fes. per</u><br><u>Hor. mar.</u><br><u>Rum. den.</u> |



OHWL DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth: \_\_\_\_\_

Min. depth: \_\_\_\_\_

Temp: \_\_\_\_\_

Max. depth: \_\_\_\_\_

Checklist of resources (if available):

|                                                        |                                                                      |                                              |
|--------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography | <input type="checkbox"/> Vegetation maps                             | <input checked="" type="checkbox"/> GPS unit |
| <input type="checkbox"/> Remotely-sensed images        | <input type="checkbox"/> Soil maps                                   | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps   | <input type="checkbox"/> Rainfall/precipitation data                 | <input type="checkbox"/> Other studies:      |
| <input type="checkbox"/> Geologic maps                 | <input checked="" type="checkbox"/> Existing delineation(s) for site |                                              |

Other drawings (plan view), notes:

Feature loses change in slope in area S,  
gradient is low.

mapped OHWM by Ericas. + Hor. mar.

Point 155 taken within area of  
sheet flow, feature loses discernible boundaries

Other forms related to this feature:  Yes  No

TITZ SWS-04-151, 152

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)



OHWM DATA SHEET

Project: SSEP Date: 11/12/2020

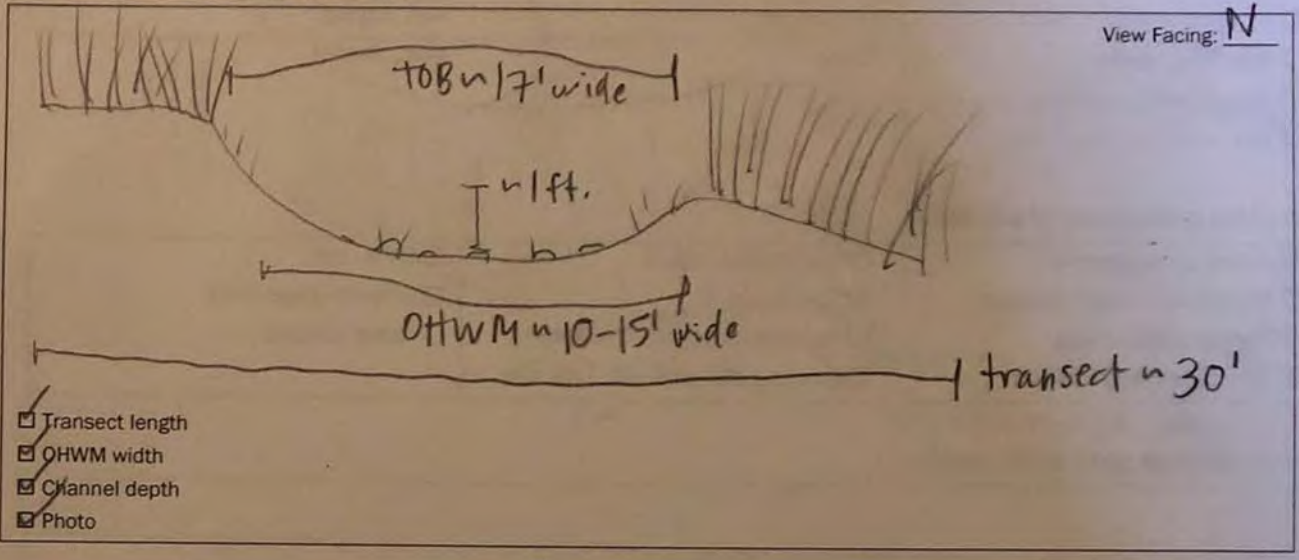
Investigator(s): AS + AG

Feature Name: SWS-04-143

Site Location: SWS05 is located in the mid-west portion of study area

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

- |                                                                             |                                                               |
|-----------------------------------------------------------------------------|---------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank                 | <input checked="" type="checkbox"/> Sediment sorting          |
| <input type="checkbox"/> Shelving                                           | <input type="checkbox"/> Leaf litter disturbed or washed away |
| <input type="checkbox"/> Changes in the character of soil                   | <input type="checkbox"/> Scour                                |
| <input checked="" type="checkbox"/> Destruction of terrestrial vegetation   | <input type="checkbox"/> Deposition                           |
| <input type="checkbox"/> Presence of litter and debris                      | <input type="checkbox"/> Bed and banks                        |
| <input type="checkbox"/> Wracking                                           | <input type="checkbox"/> Water staining                       |
| <input checked="" type="checkbox"/> Vegetation matted down, bent, or absent | <input type="checkbox"/> Change in plant community            |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM | 100       |      |        |         |          |
| Below OHWM | 16        | 30   | 60     | 0       | 0        |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM | 0        | 0         | 95       | 5        |
| Below OHWM | 0        | 0         | 5        | 95       |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

|                                                                                                                                                                     |                             |                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------------------------------|
| <p><b>Upland Species:</b></p> <p>annual grassland species -</p> <ul style="list-style-type: none"> <li>- BROTOR</li> <li>- ELY-CAP-MED</li> <li>- HOLVIR</li> </ul> | <p><b>Bank Species:</b></p> | <p><b>Emergent Species:</b></p> <p>cry. scho.</p> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------------------------------|



OHWM DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

cattle use

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Min. depth:

Temp:

Max. depth:

Checklist of resources (if available):

|                                                            |                                                                      |                                              |
|------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography     | <input checked="" type="checkbox"/> Vegetation maps                  | <input checked="" type="checkbox"/> GPS unit |
| <input checked="" type="checkbox"/> Remotely-sensed images | <input checked="" type="checkbox"/> Soil maps                        | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps       | <input checked="" type="checkbox"/> Rainfall/precipitation data      | <input type="checkbox"/> Other studies:      |
| <input checked="" type="checkbox"/> Geologic maps          | <input checked="" type="checkbox"/> Existing delineation(s) for site |                                              |

Other drawings (plan view), notes:

• transect taken within low-point in feature. seasonal wetland

Other forms related to this feature:  Yes  No

~~SWS05-T1-T5~~ SWS-04-

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)

151, 152, 154

OHWM DATA SHEET

Project: \_\_\_\_\_ Date: \_\_\_\_\_

Investigator(s): \_\_\_\_\_

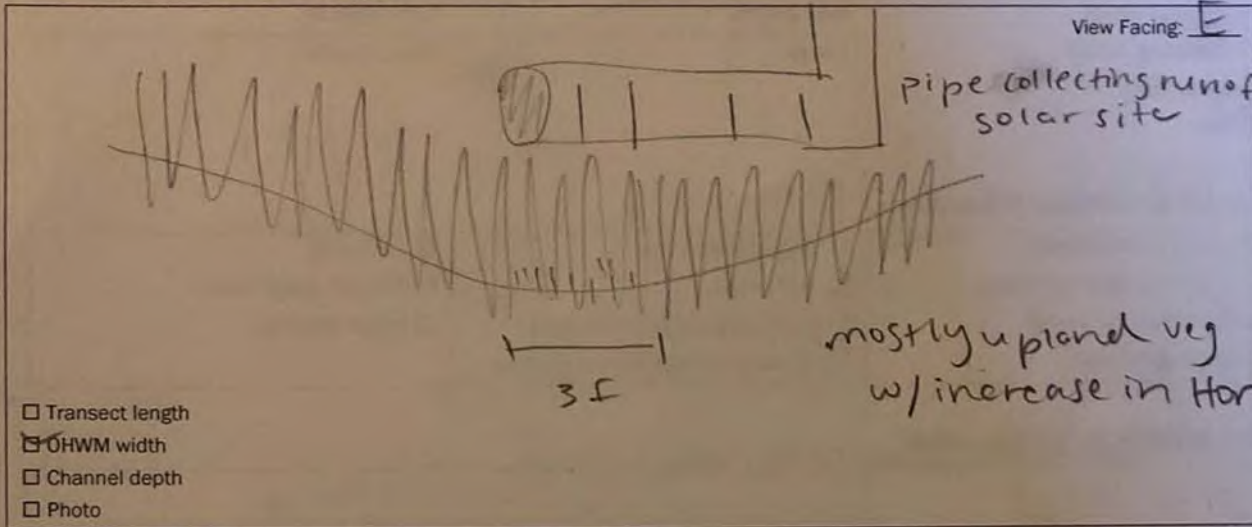
Feature Name:

US-02-156

Site Location:

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

|                                                                  |                                                               |
|------------------------------------------------------------------|---------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank      | <input type="checkbox"/> Sediment sorting                     |
| <input type="checkbox"/> Shelving                                | <input type="checkbox"/> Leaf litter disturbed or washed away |
| <input type="checkbox"/> Changes in the character of soil        | <input type="checkbox"/> Scour                                |
| <input type="checkbox"/> Destruction of terrestrial vegetation   | <input type="checkbox"/> Deposition                           |
| <input type="checkbox"/> Presence of litter and debris           | <input type="checkbox"/> Bed and banks                        |
| <input type="checkbox"/> Wracking                                | <input type="checkbox"/> Water staining                       |
| <input type="checkbox"/> Vegetation matted down, bent, or absent | <input checked="" type="checkbox"/> Change in plant community |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM | 100       | 0    | 0      | 0       | 0        |
| Below OHWM | 100       | 0    | 0      | 0       | 0        |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM | 0        | 0         | 100      | 0        |
| Below OHWM | 0        | 0         | 100      | 0        |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

|                                             |                      |                                       |
|---------------------------------------------|----------------------|---------------------------------------|
| <b>Upland Species:</b><br>All same as prev. | <b>Bank Species:</b> | <b>Emergent Species:</b><br>Hor. mar. |
|---------------------------------------------|----------------------|---------------------------------------|



OHWM DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

run off from solar site?

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Min. depth:

Temp:

Max. depth:

Checklist of resources (if available):

Aerial photography

Vegetation maps

GPS unit

Remotely-sensed images

Soil maps

Stream gage data

Topographic maps

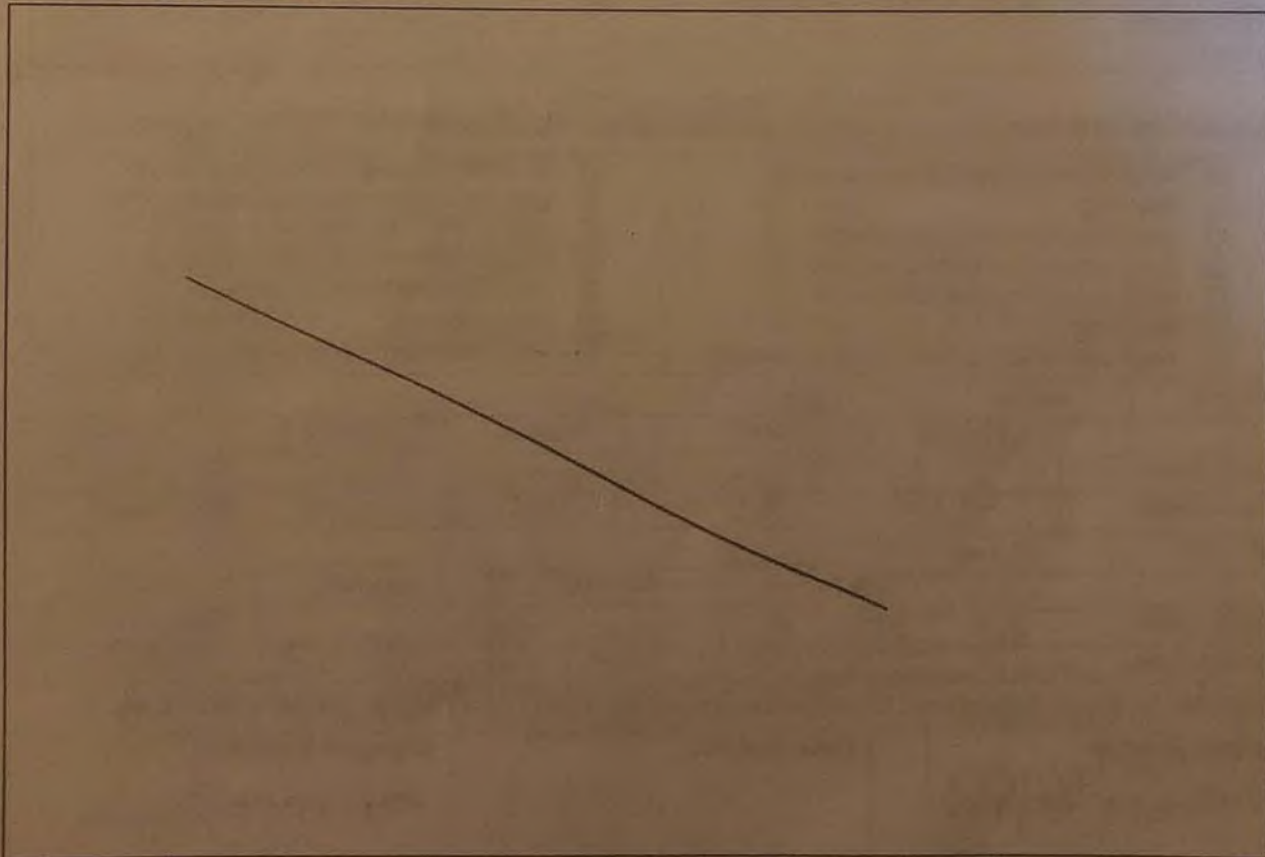
Rainfall/precipitation data

Other studies:

Geologic maps

Existing delineation(s) for site

Other drawings (plan view), notes:



Other forms related to this feature:  Yes  No

~~ED-05~~ SWS-04

Terrace, fringe, or floodplain wetland (wetland datasheet)

Low flow channel or other representative section (OHWM datasheet)

OHWM DATA SHEET

Project: SSEP Date: 11/12/2020

Investigator(s): AS + AG

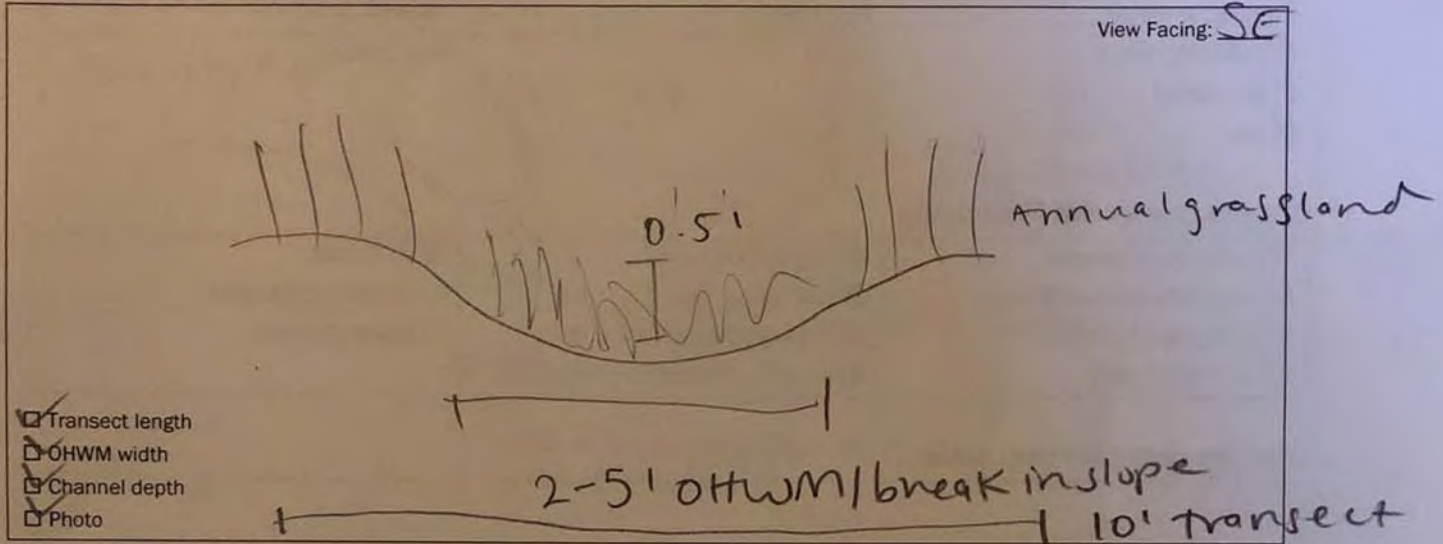
Feature Name: SWS-05-160

Site Location:

SWS in mid-west extent of project site. Drains into basin on private land north of site

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

|                                                                             |                                                                       |
|-----------------------------------------------------------------------------|-----------------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank                 | <input type="checkbox"/> Sediment sorting                             |
| <input type="checkbox"/> Shelving                                           | <input type="checkbox"/> Leaf litter disturbed or washed away         |
| <input checked="" type="checkbox"/> Changes in the character of soil        | <input type="checkbox"/> Scour                                        |
| <input type="checkbox"/> Destruction of terrestrial vegetation              | <input type="checkbox"/> Deposition                                   |
| <input type="checkbox"/> Presence of litter and debris                      | <input type="checkbox"/> Bed and banks                                |
| <input type="checkbox"/> Wracking                                           | <input checked="" type="checkbox"/> Water staining                    |
| <input checked="" type="checkbox"/> Vegetation matted down, bent, or absent | <input checked="" type="checkbox"/> Change in plant community + cover |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM | 100       | 0    | 0      | 0       | 0        |
| Below OHWM | 100       | 0    | 0      | 0       | 0        |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM | 0        | 0         | 100      | 0        |
| Below OHWM | 0        | 0         | 70       | 30       |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

| Upland Species: | Bank Species:   | Emergent Species: |
|-----------------|-----------------|-------------------|
| Bro hor         | Some<br>grasses | Eryngium sp.      |
| Hol vir         |                 | Fes per           |
| Matricaria sp.  |                 | Hor mar           |
| Hypochaeris sp. |                 |                   |



OHWM DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

*dominated by non-native plants.*

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Min. depth:

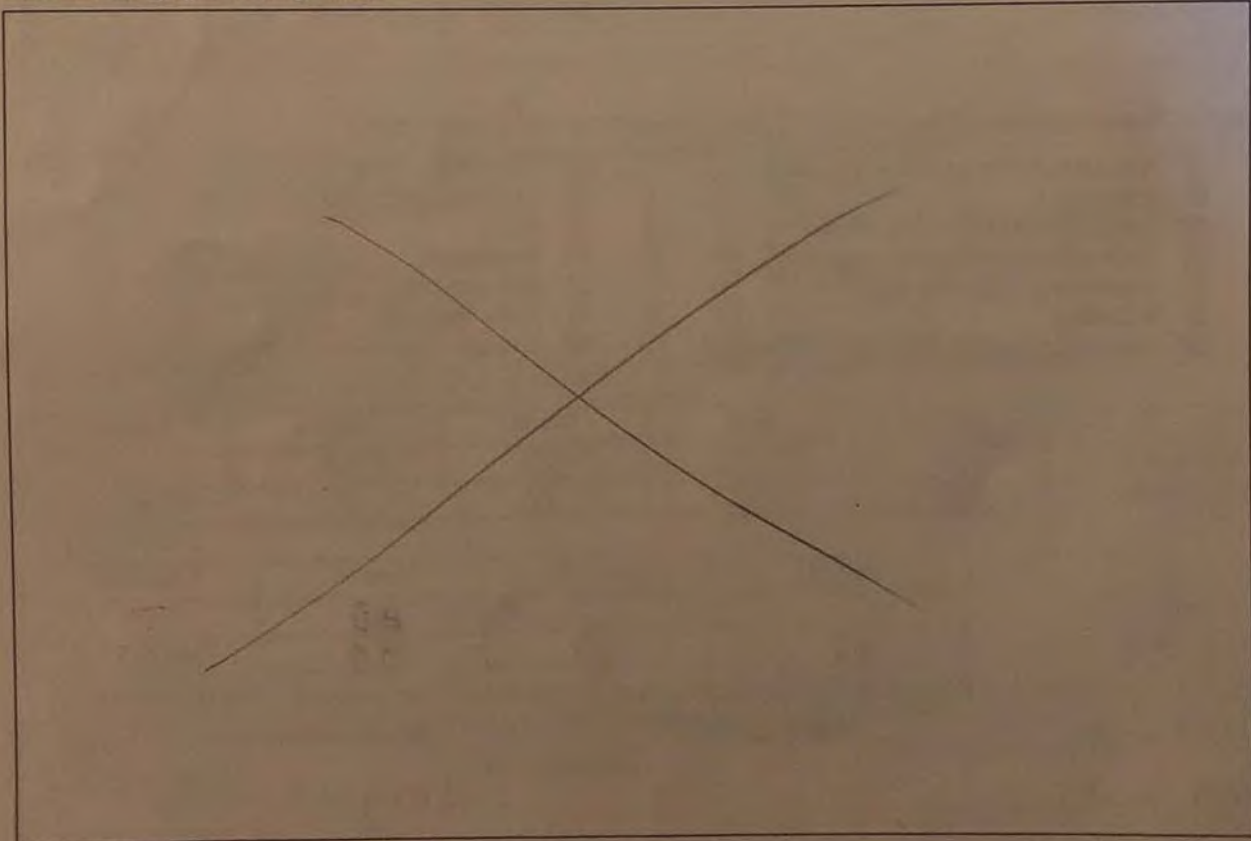
Temp:

Max. depth:

Checklist of resources (if available):

|                                                            |                                                                      |                                              |
|------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography     | <input checked="" type="checkbox"/> Vegetation maps                  | <input checked="" type="checkbox"/> GPS unit |
| <input checked="" type="checkbox"/> Remotely-sensed images | <input checked="" type="checkbox"/> Soil maps                        | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps       | <input checked="" type="checkbox"/> Rainfall/precipitation data      | <input type="checkbox"/> Other studies:      |
| <input checked="" type="checkbox"/> Geologic maps          | <input checked="" type="checkbox"/> Existing delineation(s) for site |                                              |

Other drawings (plan view), notes:



Other forms related to this feature:  Yes  No

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)

OHWM DATA SHEET

SWS-05-161

Project: \_\_\_\_\_ Date: 11/12/20

Investigator(s): \_\_\_\_\_

Feature Name:

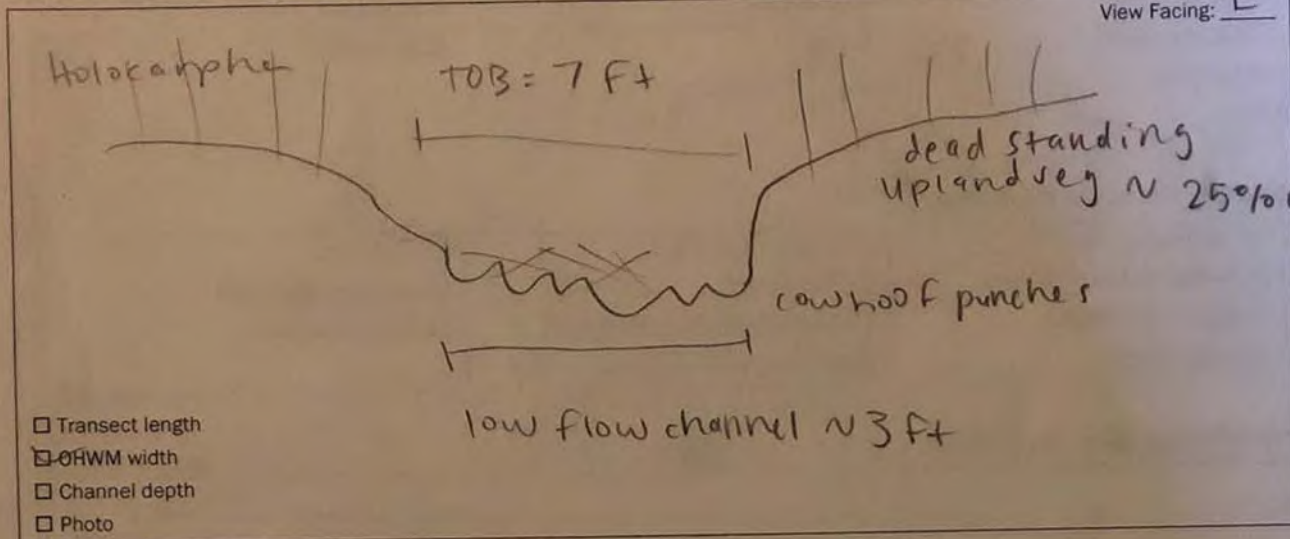
Site Location:

drainage into Basin

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):

View Facing: E



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

- |                                                                  |                                                               |
|------------------------------------------------------------------|---------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank      | <input type="checkbox"/> Sediment sorting                     |
| <input checked="" type="checkbox"/> Shelving                     | <input type="checkbox"/> Leaf litter disturbed or washed away |
| <input type="checkbox"/> Changes in the character of soil        | <input type="checkbox"/> Scour                                |
| <input type="checkbox"/> Destruction of terrestrial vegetation   | <input type="checkbox"/> Deposition                           |
| <input type="checkbox"/> Presence of litter and debris           | <input type="checkbox"/> Bed and banks                        |
| <input type="checkbox"/> Wracking                                | <input type="checkbox"/> Water staining                       |
| <input type="checkbox"/> Vegetation matted down, bent, or absent | <input checked="" type="checkbox"/> Change in plant community |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM | 100       | 0    | 0      | 0       | 0        |
| Below OHWM |           |      |        |         |          |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM | 0        | 0         | 25       | 75       |
| Below OHWM |          |           | 25       | 75       |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

|                                    |                      |                                    |
|------------------------------------|----------------------|------------------------------------|
| <b>Upland Species:</b><br>tarweeds | <b>Bank Species:</b> | <b>Emergent Species:</b><br>Horner |
|------------------------------------|----------------------|------------------------------------|



OHWM DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

Intensive grazing, ground almost barren.  
Altered hydrology, grading in basin

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Min. depth:

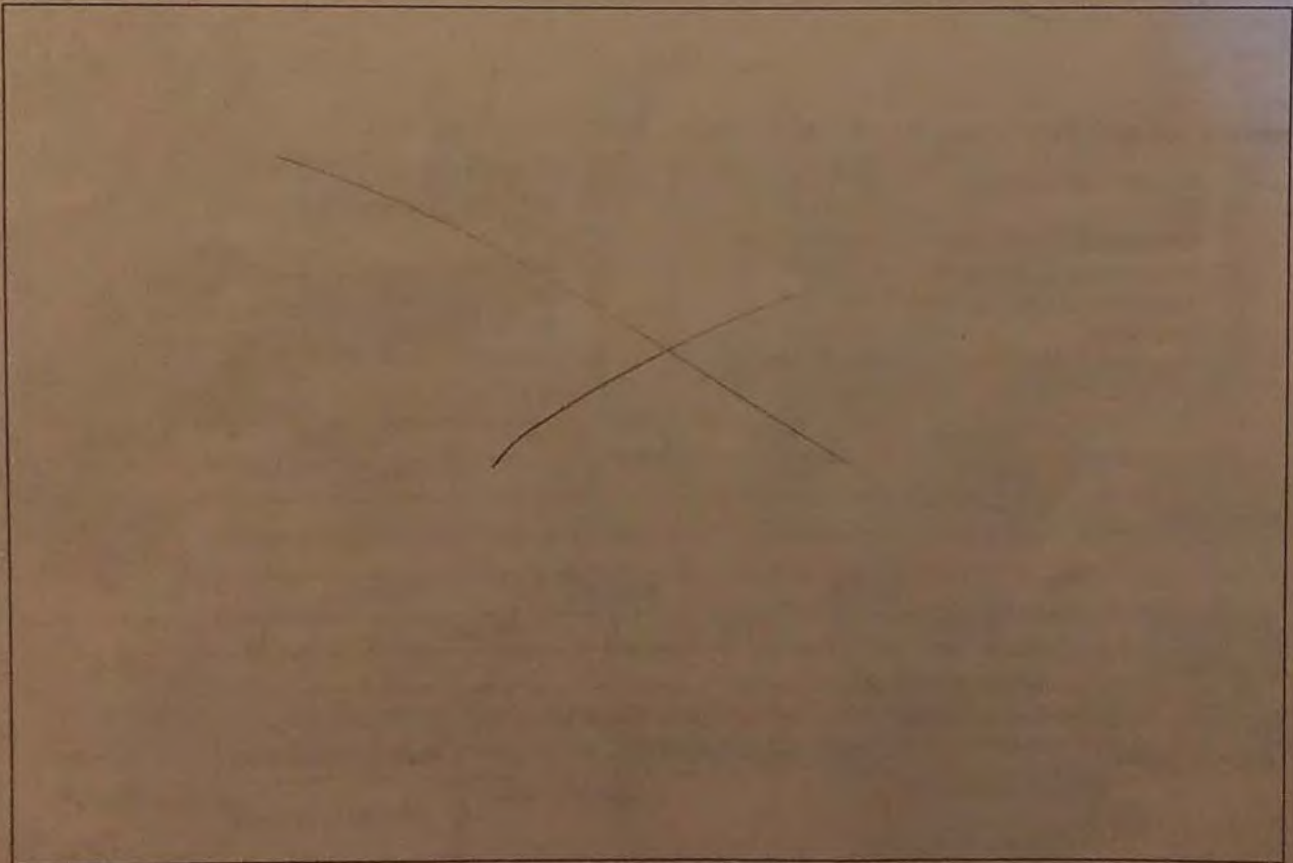
Temp:

Max. depth:

Checklist of resources (if available):

|                                                        |                                                                      |                                              |
|--------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography | <input type="checkbox"/> Vegetation maps                             | <input checked="" type="checkbox"/> GPS unit |
| <input type="checkbox"/> Remotely-sensed images        | <input checked="" type="checkbox"/> Soil maps                        | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps   | <input type="checkbox"/> Rainfall/precipitation data                 | <input type="checkbox"/> Other studies:      |
| <input type="checkbox"/> Geologic maps                 | <input checked="" type="checkbox"/> Existing delineation(s) for site |                                              |

Other drawings (plan view), notes:



Other forms related to this feature:  Yes  No

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)

Basin 01 P-03

OHWM DATA SHEET

Project: SSEP Date: 11/12/20

Transect: X 236

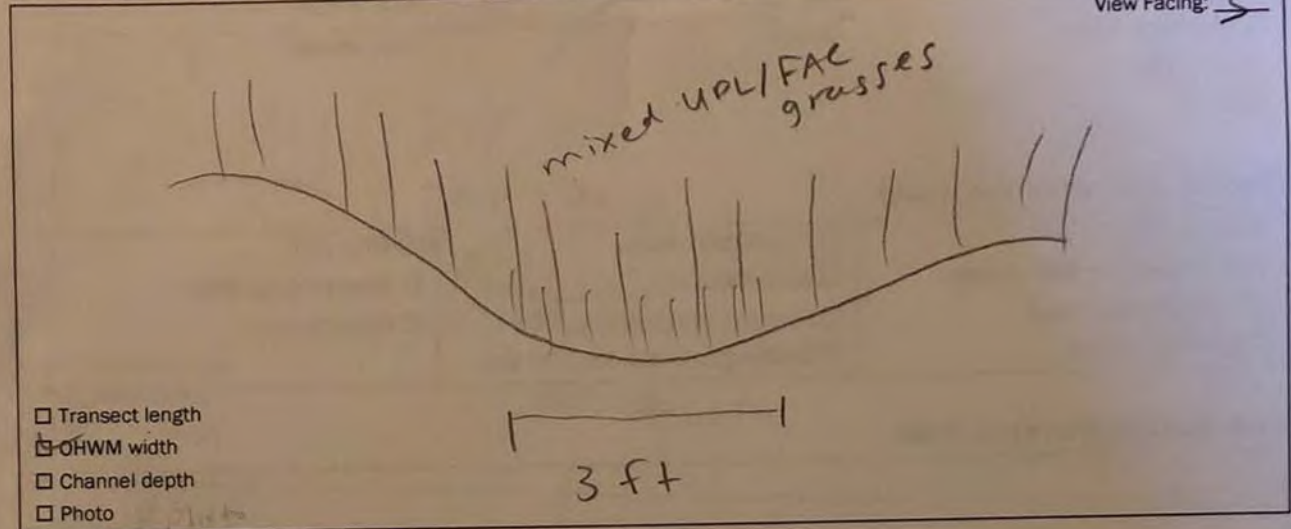
Investigator(s): AG+AS

Feature Name: US-07

Site Location: located within upper reaches of drainage complex east of large basin (Pond-03)

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

- |                                                                  |                                                                            |
|------------------------------------------------------------------|----------------------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank      | <input type="checkbox"/> Sediment sorting                                  |
| <input type="checkbox"/> Shelving                                | <input type="checkbox"/> Leaf litter disturbed or washed away              |
| <input type="checkbox"/> Changes in the character of soil        | <input type="checkbox"/> Scour                                             |
| <input type="checkbox"/> Destruction of terrestrial vegetation   | <input type="checkbox"/> Deposition                                        |
| <input type="checkbox"/> Presence of litter and debris           | <input type="checkbox"/> Bed and banks                                     |
| <input type="checkbox"/> Wracking                                | <input type="checkbox"/> Water staining                                    |
| <input type="checkbox"/> Vegetation matted down, bent, or absent | <input checked="" type="checkbox"/> Change in plant community and/or cover |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM |           |      |        |         |          |
| Below OHWM | 100       | 0    | 0      | 0       | 0        |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM | 0        | 0         | 100      | 0        |
| Below OHWM | 0        | 0         | 100      | 0        |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

|                                              |                             |                                                           |
|----------------------------------------------|-----------------------------|-----------------------------------------------------------|
| <p><b>Upland Species:</b></p> <p>Bro hor</p> | <p><b>Bank Species:</b></p> | <p><b>Emergent Species:</b></p> <p>Hormar<br/>Fes per</p> |
|----------------------------------------------|-----------------------------|-----------------------------------------------------------|



# OHWM DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

## Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Min. depth:

Temp:

Max. depth:

## Checklist of resources (if available):

|                                                        |                                                                      |                                              |
|--------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography | <input type="checkbox"/> Vegetation maps                             | <input checked="" type="checkbox"/> GPS unit |
| <input type="checkbox"/> Remotely-sensed images        | <input type="checkbox"/> Soil maps                                   | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps   | <input type="checkbox"/> Rainfall/precipitation data                 | <input type="checkbox"/> Other studies:      |
| <input type="checkbox"/> Geologic maps                 | <input checked="" type="checkbox"/> Existing delineation(s) for site |                                              |

## Other drawings (plan view), notes:

Other forms related to this feature:  Yes  No

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)

OHWM DATA SHEET

Project: SSEP Date: 11/13/20

Transect: 2

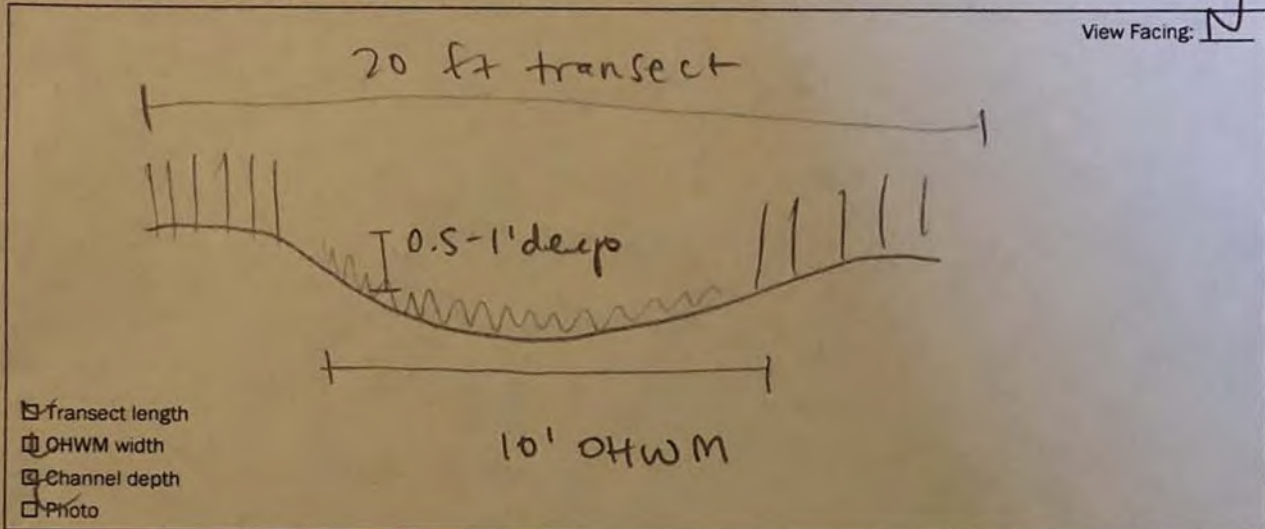
Investigator(s): LB, AG

Feature Name: SWS1113-01

Site Location:  
within SW portion of site

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

- |                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank<br><input type="checkbox"/> Shelving<br><input type="checkbox"/> Changes in the character of soil<br><input type="checkbox"/> Destruction of terrestrial vegetation<br><input type="checkbox"/> Presence of litter and debris<br><input type="checkbox"/> Wracking<br><input type="checkbox"/> Vegetation matted down, bent, or absent | <input type="checkbox"/> Sediment sorting<br><input type="checkbox"/> Leaf litter disturbed or washed away<br><input type="checkbox"/> Scour<br><input type="checkbox"/> Deposition<br><input type="checkbox"/> Bed and banks<br><input type="checkbox"/> Water staining<br><input checked="" type="checkbox"/> Change in plant community and/or cover |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM | 100       | 0    | 0      | 0       | 0        |
| Below OHWM | 100       | 0    | 0      | 0       | 0        |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM | 0        | 0         | 100      | 0        |
| Below OHWM | 0        | 0         | 100      | 0        |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

|                                                             |                      |                                                |
|-------------------------------------------------------------|----------------------|------------------------------------------------|
| <b>Upland Species:</b><br>Fly cap-med<br>Bro hor<br>Hol vir | <b>Bank Species:</b> | <b>Emergent Species:</b><br>Fes per<br>Hor man |
|-------------------------------------------------------------|----------------------|------------------------------------------------|



OHWWM DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

None

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Min. depth:

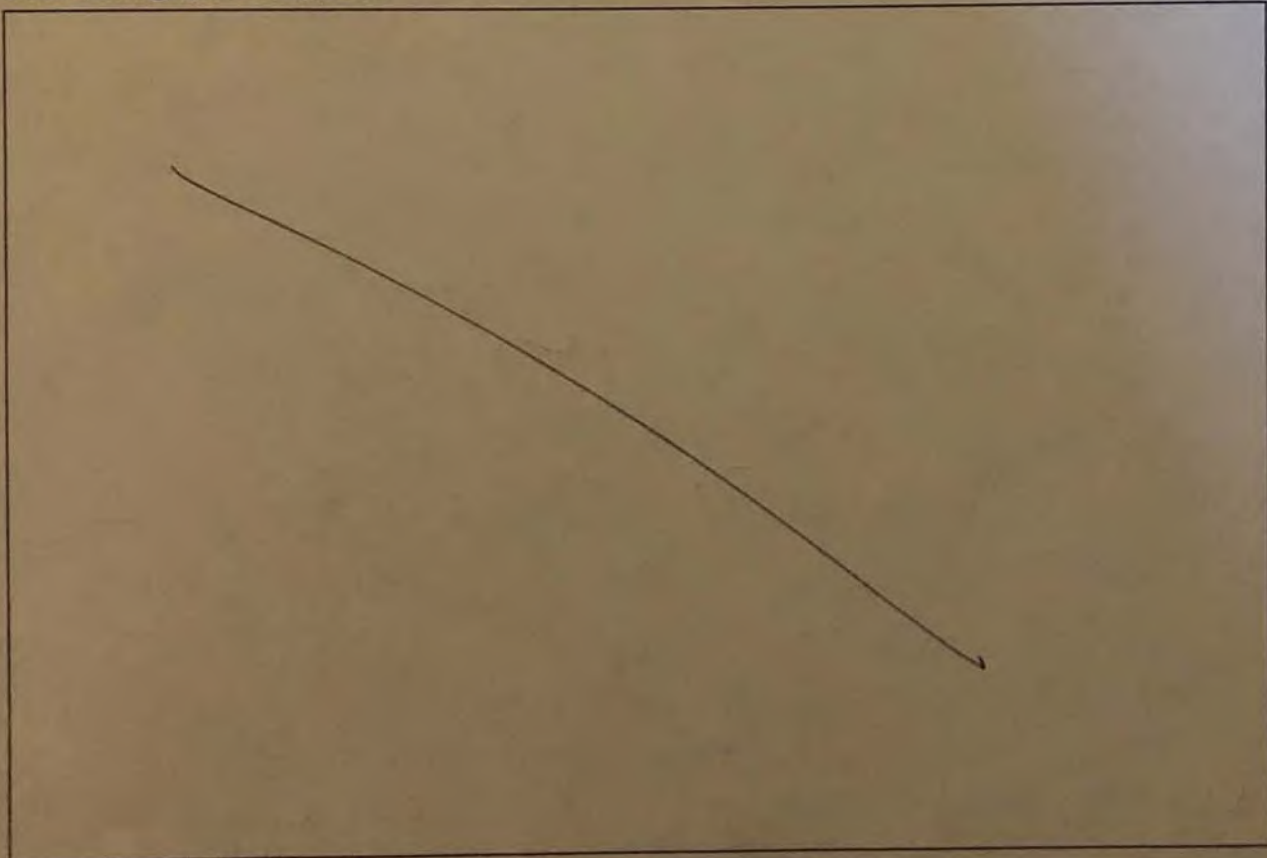
Temp:

Max. depth:

Checklist of resources (if available):

|                                                        |                                                           |                                              |
|--------------------------------------------------------|-----------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography | <input type="checkbox"/> Vegetation maps                  | <input checked="" type="checkbox"/> GPS unit |
| <input type="checkbox"/> Remotely-sensed images        | <input checked="" type="checkbox"/> Soil maps             | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps   | <input type="checkbox"/> Rainfall/precipitation data      | <input type="checkbox"/> Other studies:      |
| <input type="checkbox"/> Geologic maps                 | <input type="checkbox"/> Existing delineation(s) for site |                                              |

Other drawings (plan view), notes:



Other forms related to this feature:  Yes  No *feature continues to north*

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)

OHWM DATA SHEET

SWS-1113-1 SWS-06-218

Project: SSEP Date: 11/13/2020

Transect: 1

Investigator(s): LB, AG

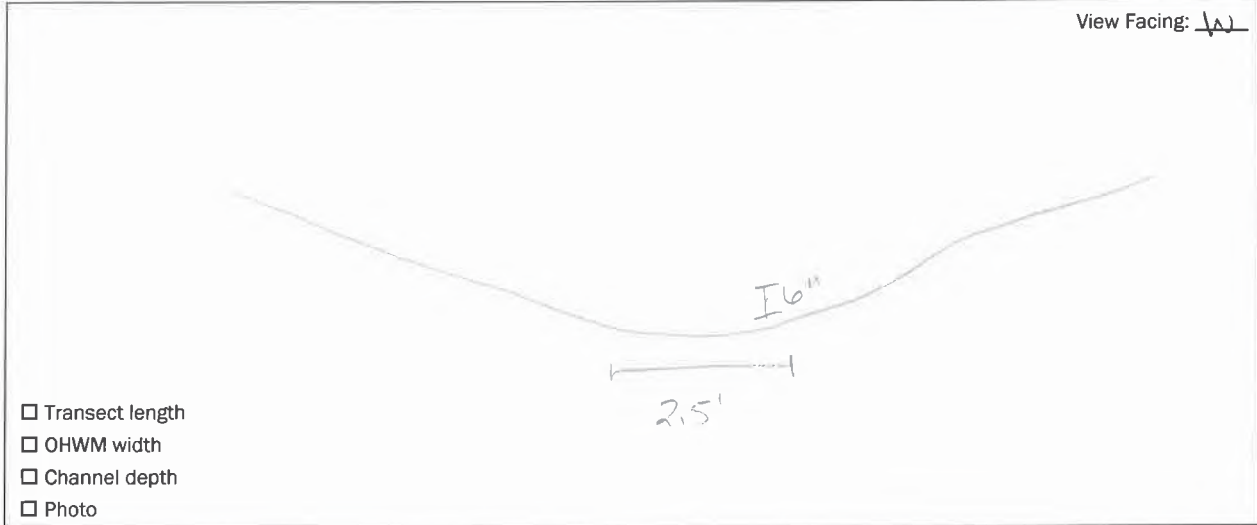
Feature Name: SWS-1113-2

Site Location:

swale between 2 hills

Feature Type:  Ephemeral  Intermittent  Perennial  Other upland swale/topo feature

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

|                                                                  |                                                               |
|------------------------------------------------------------------|---------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank      | <input type="checkbox"/> Sediment sorting                     |
| <input type="checkbox"/> Shelving                                | <input type="checkbox"/> Leaf litter disturbed or washed away |
| <input type="checkbox"/> Changes in the character of soil        | <input type="checkbox"/> Scour                                |
| <input type="checkbox"/> Destruction of terrestrial vegetation   | <input type="checkbox"/> Deposition                           |
| <input type="checkbox"/> Presence of litter and debris           | <input type="checkbox"/> Bed and banks                        |
| <input type="checkbox"/> Wracking                                | <input type="checkbox"/> Water staining                       |
| <input type="checkbox"/> Vegetation matted down, bent, or absent | <input checked="" type="checkbox"/> Change in plant community |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM | 100       |      |        |         |          |
| Below OHWM | 100       |      |        |         |          |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM |          |           | 100      |          |
| Below OHWM |          |           | 100      |          |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

|                                                                                  |                             |                                                                                                   |
|----------------------------------------------------------------------------------|-----------------------------|---------------------------------------------------------------------------------------------------|
| <p><b>Upland Species:</b></p> <p>Holvir<br/>Anebar<br/>Elycap-med<br/>Brohor</p> | <p><b>Bank Species:</b></p> | <p><b>Emergent Species:</b></p> <p>Brimin<br/>Navarretia sp.<br/>Holvir<br/>Brohor<br/>Ceratv</p> |
|----------------------------------------------------------------------------------|-----------------------------|---------------------------------------------------------------------------------------------------|



OHWL DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

None

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth: \_\_\_\_\_

Min. depth: \_\_\_\_\_

Temp: \_\_\_\_\_

Max. depth: \_\_\_\_\_

Checklist of resources (if available):

|                                                        |                                                           |                                              |
|--------------------------------------------------------|-----------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography | <input type="checkbox"/> Vegetation maps                  | <input checked="" type="checkbox"/> GPS unit |
| <input type="checkbox"/> Remotely-sensed images        | <input checked="" type="checkbox"/> Soil maps             | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps   | <input type="checkbox"/> Rainfall/precipitation data      | <input type="checkbox"/> Other studies:      |
| <input type="checkbox"/> Geologic maps                 | <input type="checkbox"/> Existing delineation(s) for site |                                              |

Other drawings (plan view), notes:

Other forms related to this feature:  Yes  No

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)

OHWM DATA SHEET

212

Project: SSEP Date: 11/13/2020

Transect: 1

Investigator(s): LB, AG

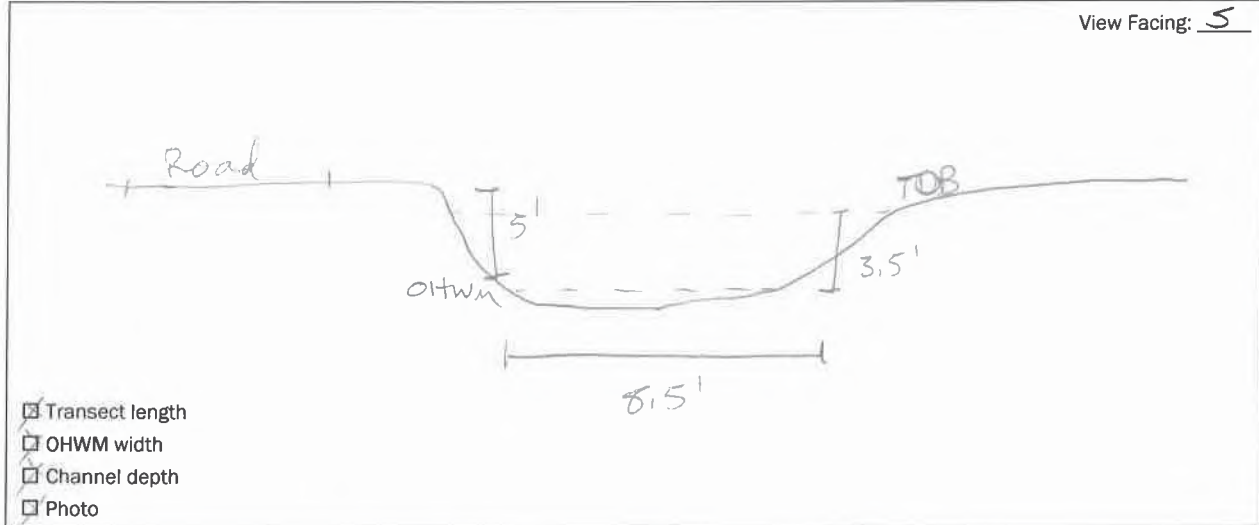
Feature Name: Ditch-1

Site Location:

Remnant Ag ditch along Dillard Road

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

|                                                                  |                                                               |
|------------------------------------------------------------------|---------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank      | <input type="checkbox"/> Sediment sorting                     |
| <input type="checkbox"/> Shelving                                | <input type="checkbox"/> Leaf litter disturbed or washed away |
| <input type="checkbox"/> Changes in the character of soil        | <input type="checkbox"/> Scour                                |
| <input type="checkbox"/> Destruction of terrestrial vegetation   | <input type="checkbox"/> Deposition                           |
| <input type="checkbox"/> Presence of litter and debris           | <input checked="" type="checkbox"/> Bed and banks             |
| <input type="checkbox"/> Wracking                                | <input type="checkbox"/> Water staining                       |
| <input type="checkbox"/> Vegetation matted down, bent, or absent | <input checked="" type="checkbox"/> Change in plant community |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM | 100       |      |        |         |          |
| Below OHWM | 100       |      |        |         |          |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM | 2        | 0         | 98       |          |
| Below OHWM |          |           | 100      |          |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

| Upland Species: | Bank Species:                                   | Emergent Species:                                                |
|-----------------|-------------------------------------------------|------------------------------------------------------------------|
| <u>Brohor</u>   | <u>Lacser</u><br><u>Hormar</u><br><u>Brohor</u> | <u>Fesper</u><br><u>Hormar</u><br><u>Lacser</u><br><u>Rumcri</u> |

OHWL DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

*created ditch. No longer in use*

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth: \_\_\_\_\_

Min. depth: \_\_\_\_\_

Temp: \_\_\_\_\_

Max. depth: \_\_\_\_\_

Checklist of resources (if available):

|                                                        |                                                           |                                              |
|--------------------------------------------------------|-----------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography | <input type="checkbox"/> Vegetation maps                  | <input checked="" type="checkbox"/> GPS unit |
| <input type="checkbox"/> Remotely-sensed images        | <input checked="" type="checkbox"/> Soil maps             | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps   | <input type="checkbox"/> Rainfall/precipitation data      | <input type="checkbox"/> Other studies:      |
| <input type="checkbox"/> Geologic maps                 | <input type="checkbox"/> Existing delineation(s) for site |                                              |

Other drawings (plan view), notes:

Other forms related to this feature:  Yes  No

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)

Project: SSSEP

Date: 11/13/2020

Transect: 2

Investigator(s): LB, AG

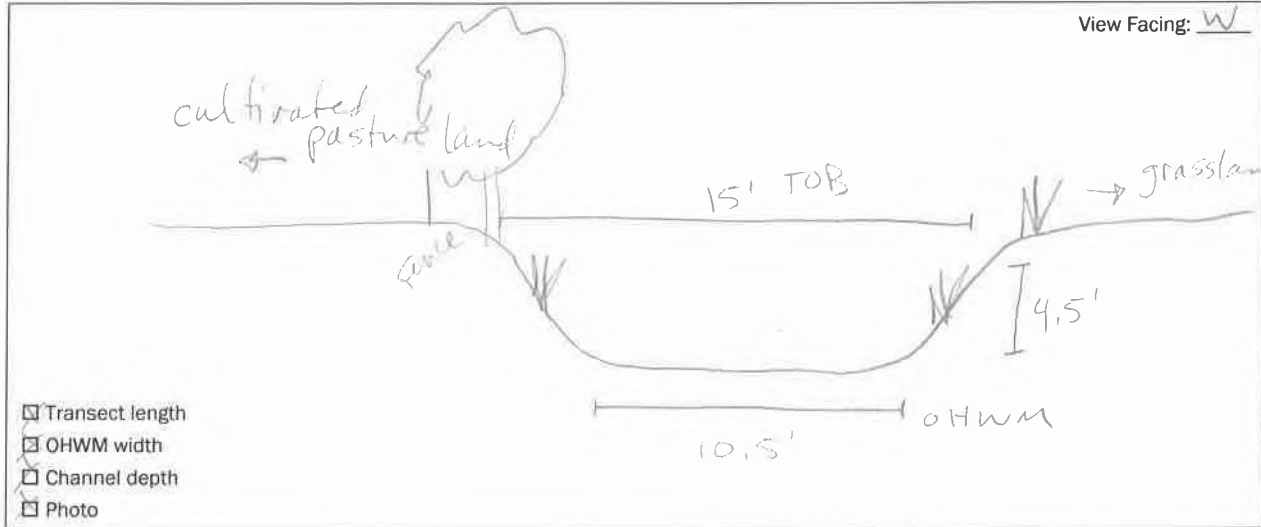
Feature Name: Ditch - 1

Site Location:

Remnant Ag ditch

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

|                                                                  |                                                               |
|------------------------------------------------------------------|---------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank      | <input type="checkbox"/> Sediment sorting                     |
| <input type="checkbox"/> Shelving                                | <input type="checkbox"/> Leaf litter disturbed or washed away |
| <input type="checkbox"/> Changes in the character of soil        | <input type="checkbox"/> Scour                                |
| <input type="checkbox"/> Destruction of terrestrial vegetation   | <input type="checkbox"/> Deposition                           |
| <input type="checkbox"/> Presence of litter and debris           | <input checked="" type="checkbox"/> Bed and banks             |
| <input type="checkbox"/> Wracking                                | <input type="checkbox"/> Water staining                       |
| <input type="checkbox"/> Vegetation matted down, bent, or absent | <input checked="" type="checkbox"/> Change in plant community |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM | 100       |      |        |         |          |
| Below OHWM | 100       |      |        |         |          |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM | 5        | 0         | 95       | 0        |
| Below OHWM |          |           | 100      |          |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

| Upland Species:                                                                                 | Bank Species:                                                                                     | Emergent Species:                                                             |
|-------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| <p><u>Quelob</u><br/> <u>Salgo</u><br/> <u>Brohor</u><br/> <u>lucser</u><br/> <u>Brodia</u></p> | <p><u>Hormar</u><br/> <u>lucser</u><br/> <u>Juneff</u><br/> <u>Branig</u><br/> <u>Croset.</u></p> | <p><u>Epibra</u><br/> <u>Fesper</u><br/> <u>Hormar</u><br/> <u>Rumcri</u></p> |



OHWL DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

Man-made. Western portion is used for goat pen, vegetation disturbed / grazed

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Min. depth:

Temp:

Max. depth:

Checklist of resources (if available):

|                                                      |                                                           |                                              |
|------------------------------------------------------|-----------------------------------------------------------|----------------------------------------------|
| <input type="checkbox"/> Aerial photography          | <input type="checkbox"/> Vegetation maps                  | <input checked="" type="checkbox"/> GPS unit |
| <input type="checkbox"/> Remotely-sensed images      | <input checked="" type="checkbox"/> Soil maps             | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps | <input type="checkbox"/> Rainfall/precipitation data      | <input type="checkbox"/> Other studies:      |
| <input type="checkbox"/> Geologic maps               | <input type="checkbox"/> Existing delineation(s) for site |                                              |

Other drawings (plan view), notes:

Other forms related to this feature:  Yes  No

Terrace, fringe, or floodplain wetland (wetland datasheet)

Low flow channel or other representative section (OHWM datasheet)

OHWM DATA SHEET

Project: \_\_\_\_\_ Date: 11/13/20

Transect: 1

Investigator(s): AG

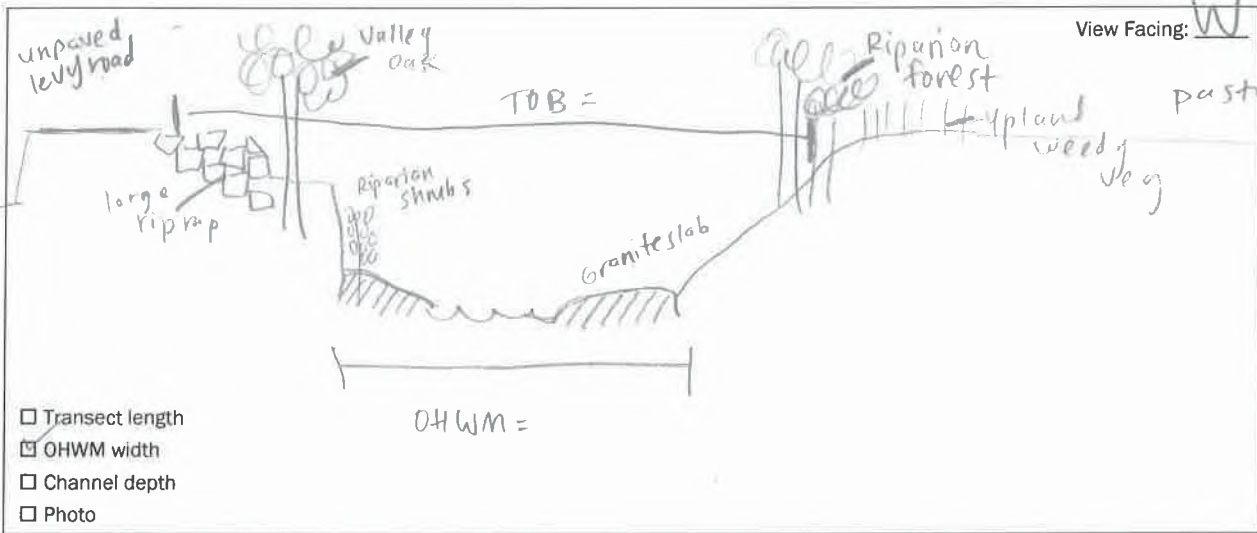
Feature Name: River-01

Site Location:

CONSUMERS RIVER

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

|                                                                             |                                                               |
|-----------------------------------------------------------------------------|---------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank                 | <input type="checkbox"/> Sediment sorting                     |
| <input checked="" type="checkbox"/> Shelving                                | <input type="checkbox"/> Leaf litter disturbed or washed away |
| <input type="checkbox"/> Changes in the character of soil                   | <input type="checkbox"/> Scour                                |
| <input checked="" type="checkbox"/> Destruction of terrestrial vegetation   | <input type="checkbox"/> Deposition                           |
| <input checked="" type="checkbox"/> Presence of litter and debris           | <input checked="" type="checkbox"/> Bed and banks             |
| <input type="checkbox"/> Wracking                                           | <input checked="" type="checkbox"/> Water staining            |
| <input checked="" type="checkbox"/> Vegetation matted down, bent, or absent | <input type="checkbox"/> Change in plant community            |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders     |
|------------|-----------|------|--------|---------|--------------|
| Above OHWM | 50        | 0    | 0      | 0       | 50 (Rip-rap) |
| Below OHWM | 0         | 100  | 0      | 0       | 0            |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM | 25       | 25        | 50       | 0        |
| Below OHWM | 0        | 25        | 25       | 50       |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

| Upland Species:                                                                     | Bank Species:                                                   | Emergent Species:       |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------|-------------------------|
| Yellowstar thistle<br>Italian thistle<br>NN grasses<br>Coastive oak<br>Black walnut | Valley oak<br>CA grape<br>Salix<br>Conium maculatum<br>Sambucus | Salix spp<br>Cottonwood |

OHW M DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

bank stabilization, litter, levy road, nearby residences, transients

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth: 5 ft

Min. depth: 1 ft

Temp: ?

Max. depth: 10 ft

Checklist of resources (if available):

|                                                        |                                                                      |                                              |
|--------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography | <input type="checkbox"/> Vegetation maps                             | <input checked="" type="checkbox"/> GPS unit |
| <input type="checkbox"/> Remotely-sensed images        | <input checked="" type="checkbox"/> Soil maps                        | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps   | <input type="checkbox"/> Rainfall/precipitation data                 | <input type="checkbox"/> Other studies:      |
| <input type="checkbox"/> Geologic maps                 | <input checked="" type="checkbox"/> Existing delineation(s) for site |                                              |

Other drawings (plan view), notes:

Other forms related to this feature:  Yes  No

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)

OHWM DATA SHEET

Project: SSEP Date: 11/13/2020

Transect: 1

Investigator(s): LB, AG

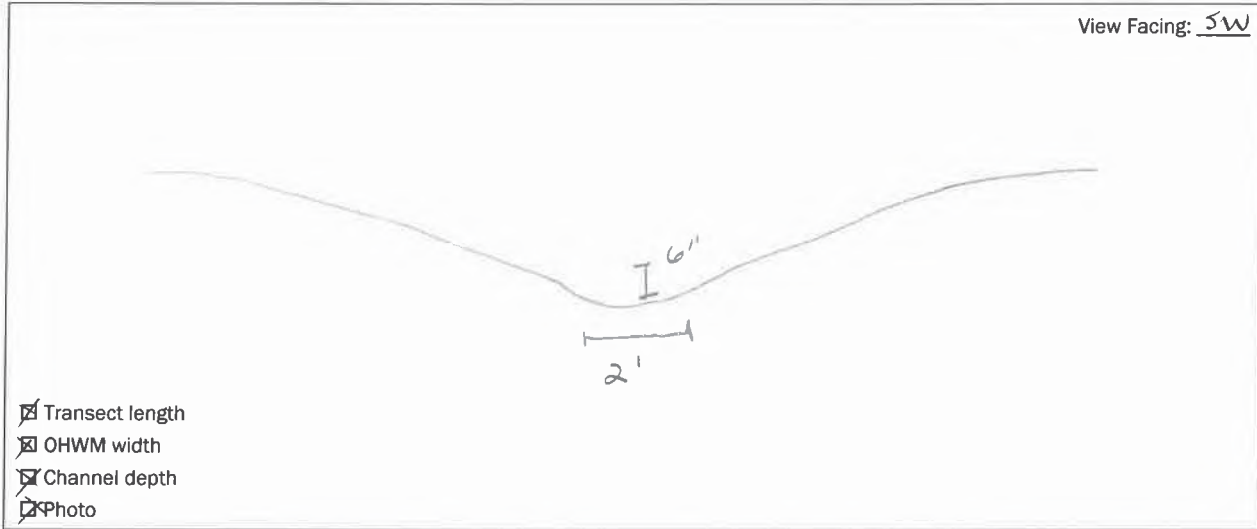
Feature Name: US-11/13-1

Site Location:

Grassland uphill from seasonal wetland

Feature Type:  Ephemeral  Intermittent  Perennial  Other upland swale / topographic feature between 2 hills

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

|                                                                  |                                                               |
|------------------------------------------------------------------|---------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank      | <input type="checkbox"/> Sediment sorting                     |
| <input type="checkbox"/> Shelving                                | <input type="checkbox"/> Leaf litter disturbed or washed away |
| <input type="checkbox"/> Changes in the character of soil        | <input type="checkbox"/> Scour                                |
| <input type="checkbox"/> Destruction of terrestrial vegetation   | <input type="checkbox"/> Deposition                           |
| <input type="checkbox"/> Presence of litter and debris           | <input type="checkbox"/> Bed and banks                        |
| <input type="checkbox"/> Wracking                                | <input type="checkbox"/> Water staining                       |
| <input type="checkbox"/> Vegetation matted down, bent, or absent | <input checked="" type="checkbox"/> Change in plant community |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM | 100       |      |        |         |          |
| Below OHWM | 100       |      |        |         |          |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM |          |           | 100      |          |
| Below OHWM |          |           | 100      |          |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

| Upland Species:            | Bank Species:              | Emergent Species:          |
|----------------------------|----------------------------|----------------------------|
| Holvir<br>Brohor<br>Broele | Holvir<br>Brohor<br>Hormar | Brimin<br>Hormar<br>Fesper |



OHWL DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

Animal track along feature.  
Small mammal burrows activity

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth: \_\_\_\_\_

Min. depth: \_\_\_\_\_

Temp: \_\_\_\_\_

Max. depth: \_\_\_\_\_

Checklist of resources (if available):

|                                                        |                                                           |                                              |
|--------------------------------------------------------|-----------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography | <input type="checkbox"/> Vegetation maps                  | <input checked="" type="checkbox"/> GPS unit |
| <input type="checkbox"/> Remotely-sensed images        | <input checked="" type="checkbox"/> Soil maps             | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps   | <input type="checkbox"/> Rainfall/precipitation data      | <input type="checkbox"/> Other studies:      |
| <input type="checkbox"/> Geologic maps                 | <input type="checkbox"/> Existing delineation(s) for site |                                              |

Other drawings (plan view), notes:

Other forms related to this feature:  Yes  No

Terrace, fringe, or floodplain wetland (wetland datasheet)

Low flow channel or other representative section (OHWM datasheet)

OHWM DATA SHEET

Project: \_\_\_\_\_ Date: 11/13/20

Transect: 1

Investigator(s): AG

Feature Name: US113-02

Site Location:

SE corner of site

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):

View Facing: \_\_\_\_\_

5 ft wide

- Transect length
- OHWM width
- Channel depth
- Photo

Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

|                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank<br><input type="checkbox"/> Shelving<br><input type="checkbox"/> Changes in the character of soil<br><input type="checkbox"/> Destruction of terrestrial vegetation<br><input type="checkbox"/> Presence of litter and debris<br><input type="checkbox"/> Wracking<br><input type="checkbox"/> Vegetation matted down, bent, or absent | <input type="checkbox"/> Sediment sorting<br><input type="checkbox"/> Leaf litter disturbed or washed away<br><input type="checkbox"/> Scour<br><input type="checkbox"/> Deposition<br><input type="checkbox"/> Bed and banks<br><input type="checkbox"/> Water staining<br><input checked="" type="checkbox"/> Change in plant community |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|            | Clay/Silt  | Sand     | Gravel   | Cobbles  | Boulders |
|------------|------------|----------|----------|----------|----------|
| Above OHWM |            |          |          |          |          |
| Below OHWM | <u>100</u> | <u>0</u> | <u>0</u> | <u>0</u> | <u>0</u> |

|            | Tree (%) | Shrub (%) | Herb (%)   | Bare (%) |
|------------|----------|-----------|------------|----------|
| Above OHWM |          |           |            |          |
| Below OHWM | <u>0</u> | <u>0</u>  | <u>100</u> | <u>0</u> |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

|                                                       |                             |                                 |
|-------------------------------------------------------|-----------------------------|---------------------------------|
| <p><b>Upland Species:</b></p> <p><u>See above</u></p> | <p><b>Bank Species:</b></p> | <p><b>Emergent Species:</b></p> |
|-------------------------------------------------------|-----------------------------|---------------------------------|

OHWM DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

solar array runoff?

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth: \_\_\_\_\_

Min. depth: \_\_\_\_\_

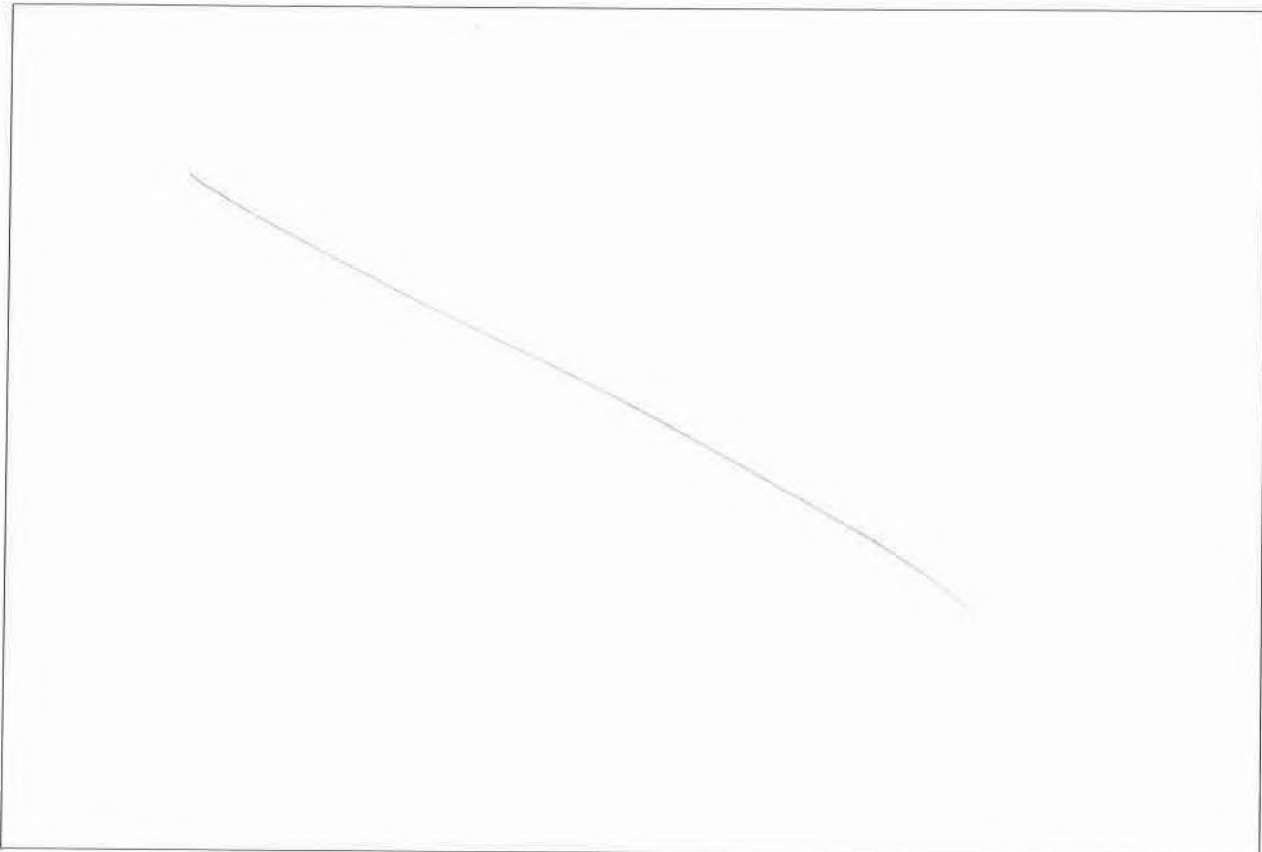
Temp: \_\_\_\_\_

Max. depth: \_\_\_\_\_

Checklist of resources (if available):

|                                                        |                                                                      |                                              |
|--------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography | <input type="checkbox"/> Vegetation maps                             | <input checked="" type="checkbox"/> GPS unit |
| <input type="checkbox"/> Remotely-sensed images        | <input checked="" type="checkbox"/> Soil maps                        | <input type="checkbox"/> Stream gage data    |
| <input checked="" type="checkbox"/> Topographic maps   | <input type="checkbox"/> Rainfall/precipitation data                 | <input type="checkbox"/> Other studies:      |
| <input type="checkbox"/> Geologic maps                 | <input checked="" type="checkbox"/> Existing delineation(s) for site |                                              |

Other drawings (plan view), notes:



Other forms related to this feature:  Yes  No flows into SW-53

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)

OHWM DATA SHEET

Project: SSCP Date: 11/13/2020 Transect: 1  
 Investigator(s): AG, LB Feature Name: US1113-03

Site Location:

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):

View Facing: S

Transect length  
 OHWM width  
 Channel depth  
 Photo

Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

- |                                                                  |                                                               |
|------------------------------------------------------------------|---------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank      | <input type="checkbox"/> Sediment sorting                     |
| <input type="checkbox"/> Shelving                                | <input type="checkbox"/> Leaf litter disturbed or washed away |
| <input type="checkbox"/> Changes in the character of soil        | <input type="checkbox"/> Scour                                |
| <input type="checkbox"/> Destruction of terrestrial vegetation   | <input type="checkbox"/> Deposition                           |
| <input type="checkbox"/> Presence of litter and debris           | <input type="checkbox"/> Bed and banks                        |
| <input type="checkbox"/> Wracking                                | <input type="checkbox"/> Water staining                       |
| <input type="checkbox"/> Vegetation matted down, bent, or absent | <input checked="" type="checkbox"/> Change in plant community |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM |           |      |        |         |          |
| Below OHWM |           |      |        |         |          |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM |          |           |          |          |
| Below OHWM |          |           | 100      | 0        |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

| Upland Species:         | Bank Species: | Emergent Species:  |
|-------------------------|---------------|--------------------|
| Ely cap med<br>Brodiaea |               | Fes per<br>Hor man |



OHWM DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

Solar site runoff?

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Min. depth:

Temp:

Max. depth:

Checklist of resources (if available):

|                                                 |                                                           |                                           |
|-------------------------------------------------|-----------------------------------------------------------|-------------------------------------------|
| <input type="checkbox"/> Aerial photography     | <input type="checkbox"/> Vegetation maps                  | <input type="checkbox"/> GPS unit         |
| <input type="checkbox"/> Remotely-sensed images | <input type="checkbox"/> Soil maps                        | <input type="checkbox"/> Stream gage data |
| <input type="checkbox"/> Topographic maps       | <input type="checkbox"/> Rainfall/precipitation data      | <input type="checkbox"/> Other studies:   |
| <input type="checkbox"/> Geologic maps          | <input type="checkbox"/> Existing delineation(s) for site |                                           |

Other drawings (plan view), notes:

Other forms related to this feature:  Yes  No

connects to SWS + SW

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)

OHWM DATA SHEET

Project: SSEP Date: 11/13/2020

Transect: 1

Investigator(s): AG

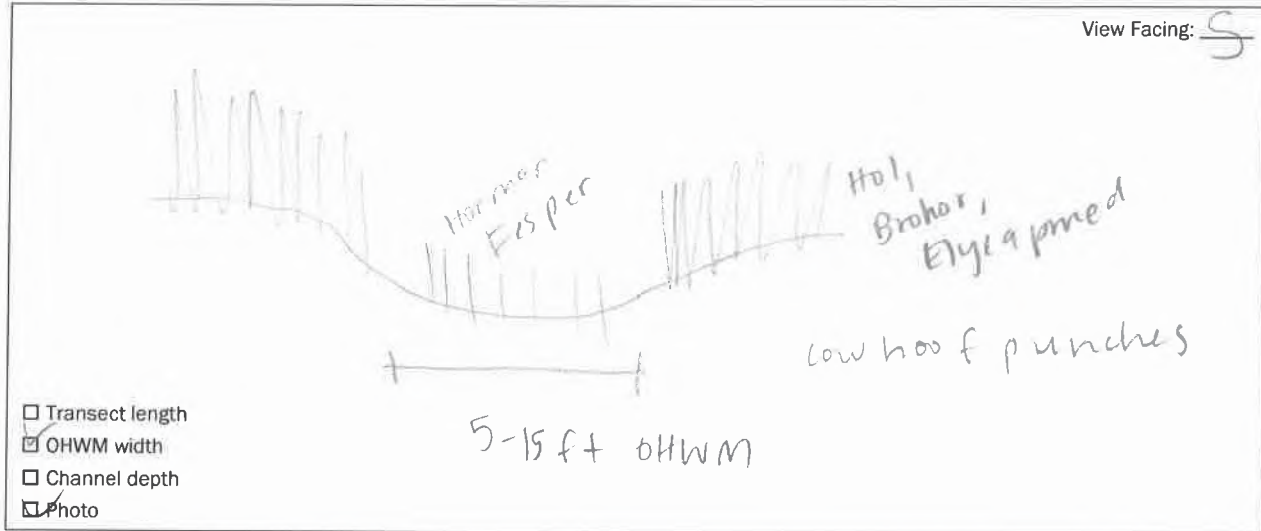
Feature Name: SW S1113-02

Site Location:

SE corner of site

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

|                                                                             |                                                               |
|-----------------------------------------------------------------------------|---------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank                 | <input type="checkbox"/> Sediment sorting                     |
| <input type="checkbox"/> Shelving                                           | <input type="checkbox"/> Leaf litter disturbed or washed away |
| <input type="checkbox"/> Changes in the character of soil                   | <input type="checkbox"/> Scour                                |
| <input type="checkbox"/> Destruction of terrestrial vegetation              | <input type="checkbox"/> Deposition                           |
| <input type="checkbox"/> Presence of litter and debris                      | <input type="checkbox"/> Bed and banks                        |
| <input type="checkbox"/> Wracking                                           | <input type="checkbox"/> Water staining                       |
| <input checked="" type="checkbox"/> Vegetation matted down, bent, or absent | <input checked="" type="checkbox"/> Change in plant community |

|            | Clay/Silt  | Sand     | Gravel   | Cobbles  | Boulders |
|------------|------------|----------|----------|----------|----------|
| Above OHWM | <u>100</u> | <u>0</u> | <u>0</u> | <u>0</u> | <u>0</u> |
| Below OHWM |            |          |          |          |          |

|            | Tree (%) | Shrub (%) | Herb (%)   | Bare (%)  |
|------------|----------|-----------|------------|-----------|
| Above OHWM | <u>0</u> | <u>0</u>  | <u>100</u> | <u>0</u>  |
| Below OHWM |          |           | <u>75</u>  | <u>25</u> |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

| Upland Species:                                    | Bank Species: | Emergent Species:              |
|----------------------------------------------------|---------------|--------------------------------|
| <u>Ely cap med</u><br><u>Bro hor</u><br><u>Hol</u> |               | <u>Hormar</u><br><u>Fesper</u> |

OHWL DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

Nearby solar site + residences.

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Min. depth:

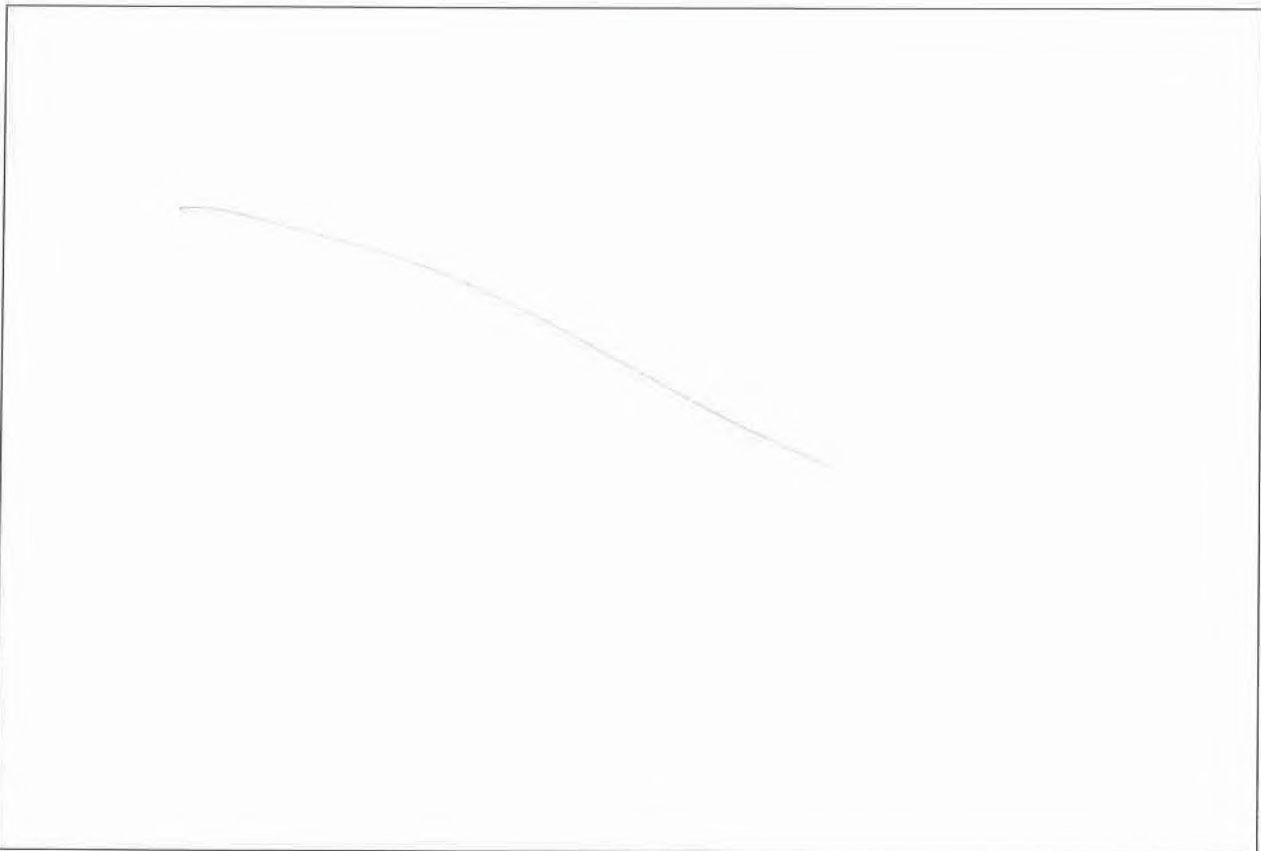
Temp:

Max. depth:

Checklist of resources (if available):

|                                                 |                                                           |                                           |
|-------------------------------------------------|-----------------------------------------------------------|-------------------------------------------|
| <input type="checkbox"/> Aerial photography     | <input type="checkbox"/> Vegetation maps                  | <input type="checkbox"/> GPS unit         |
| <input type="checkbox"/> Remotely-sensed images | <input type="checkbox"/> Soil maps                        | <input type="checkbox"/> Stream gage data |
| <input type="checkbox"/> Topographic maps       | <input type="checkbox"/> Rainfall/precipitation data      | <input type="checkbox"/> Other studies:   |
| <input type="checkbox"/> Geologic maps          | <input type="checkbox"/> Existing delineation(s) for site |                                           |

Other drawings (plan view), notes:



Other forms related to this feature:  Yes  No

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)

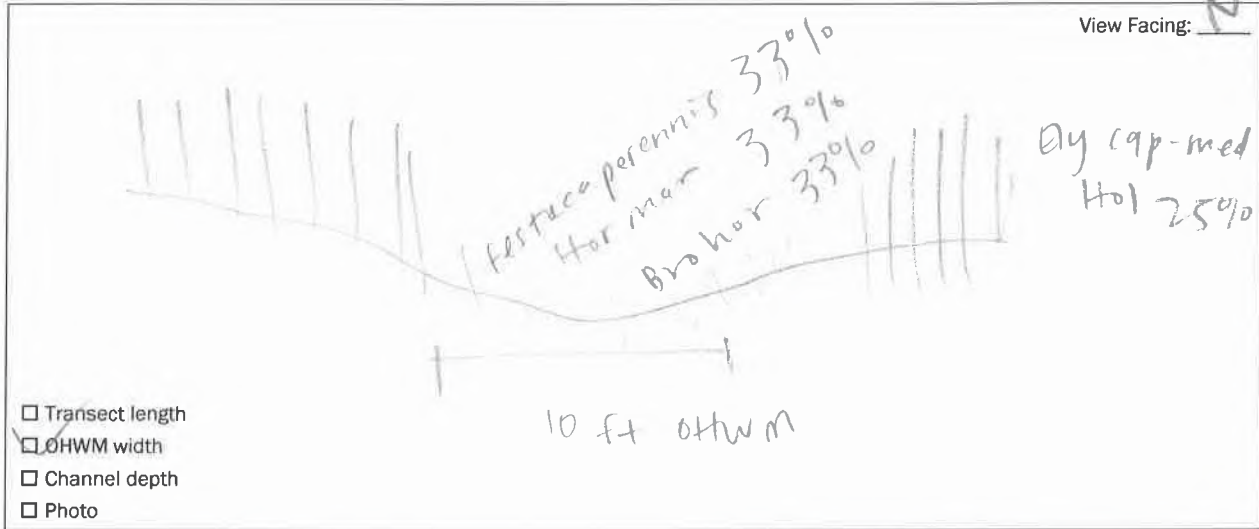
OHWM DATA SHEET

Project: SSEP Date: 11/13/2020 Transect: 1  
 Investigator(s): \_\_\_\_\_ Feature Name: SWC1113-03

Site Location: \_\_\_\_\_

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

|                                                                  |                                                               |
|------------------------------------------------------------------|---------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank      | <input type="checkbox"/> Sediment sorting                     |
| <input type="checkbox"/> Shelving                                | <input type="checkbox"/> Leaf litter disturbed or washed away |
| <input type="checkbox"/> Changes in the character of soil        | <input type="checkbox"/> Scour                                |
| <input type="checkbox"/> Destruction of terrestrial vegetation   | <input type="checkbox"/> Deposition                           |
| <input type="checkbox"/> Presence of litter and debris           | <input type="checkbox"/> Bed and banks                        |
| <input type="checkbox"/> Wracking                                | <input type="checkbox"/> Water staining                       |
| <input type="checkbox"/> Vegetation matted down, bent, or absent | <input type="checkbox"/> Change in plant community            |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM |           |      |        |         |          |
| Below OHWM |           |      |        |         |          |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM |          |           |          |          |
| Below OHWM |          |           |          |          |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

|                        |                      |                          |
|------------------------|----------------------|--------------------------|
| <b>Upland Species:</b> | <b>Bank Species:</b> | <b>Emergent Species:</b> |
|                        |                      |                          |



OHWM DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth: \_\_\_\_\_

Min. depth: \_\_\_\_\_

Temp: \_\_\_\_\_

Max. depth: \_\_\_\_\_

Checklist of resources (if available):

|                                                 |                                                           |                                           |
|-------------------------------------------------|-----------------------------------------------------------|-------------------------------------------|
| <input type="checkbox"/> Aerial photography     | <input type="checkbox"/> Vegetation maps                  | <input type="checkbox"/> GPS unit         |
| <input type="checkbox"/> Remotely-sensed images | <input type="checkbox"/> Soil maps                        | <input type="checkbox"/> Stream gage data |
| <input type="checkbox"/> Topographic maps       | <input type="checkbox"/> Rainfall/precipitation data      | <input type="checkbox"/> Other studies:   |
| <input type="checkbox"/> Geologic maps          | <input type="checkbox"/> Existing delineation(s) for site |                                           |

Other drawings (plan view), notes:

Other forms related to this feature:  Yes  No

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)

**OHWM DATA SHEET**

Project: SSEP Date: \_\_\_\_\_

Transect: 1

Investigator(s): ALG

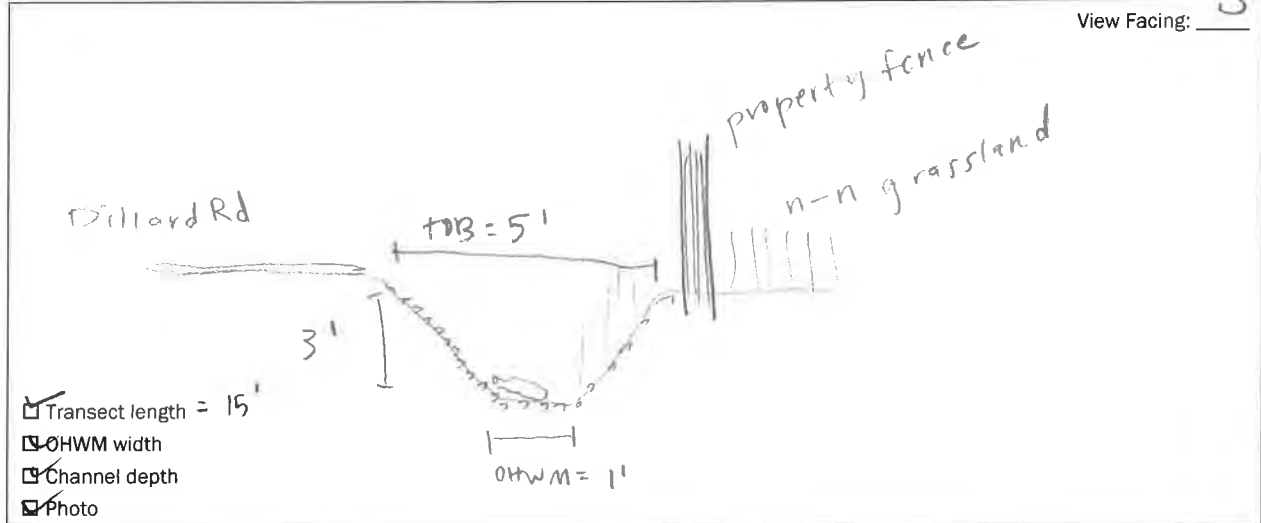
Feature Name: \_\_\_\_\_

**Site Location:**

drainage ditch along west side of Dillard Rd

Feature Type:  Ephemeral  Intermittent  Perennial  Other

**Transect (cross-section) drawing(s):**



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

|                                                                             |                                                                            |
|-----------------------------------------------------------------------------|----------------------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank                 | <input type="checkbox"/> Sediment sorting                                  |
| <input type="checkbox"/> Shelving                                           | <input type="checkbox"/> Leaf litter disturbed or washed away              |
| <input type="checkbox"/> Changes in the character of soil                   | <input type="checkbox"/> Scour                                             |
| <input type="checkbox"/> Destruction of terrestrial vegetation              | <input type="checkbox"/> Deposition                                        |
| <input checked="" type="checkbox"/> Presence of litter and debris           | <input checked="" type="checkbox"/> Bed and banks                          |
| <input type="checkbox"/> Wracking                                           | <input type="checkbox"/> Water staining                                    |
| <input checked="" type="checkbox"/> Vegetation matted down, bent, or absent | <input checked="" type="checkbox"/> Change in plant community and/or cover |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM | 0         | 0    | 100    | 0       | 0        |
| Below OHWM | 50        | 0    | 50     | 0       | 0        |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM | 0        | 0         | 50       | 50       |
| Below OHWM | 0        | 0         | 90       | 10       |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

|                                                     |                      |                               |
|-----------------------------------------------------|----------------------|-------------------------------|
| <b>Upland Species:</b><br>Bromus spp.<br>Avena spp. | <b>Bank Species:</b> | <b>Emergent Species:</b><br>Ø |
|-----------------------------------------------------|----------------------|-------------------------------|

OHWM DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

High litter/debris

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Temp:

Min. depth:

Max. depth:

Checklist of resources (if available):

|                                                        |                                                           |                                           |
|--------------------------------------------------------|-----------------------------------------------------------|-------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography | <input type="checkbox"/> Vegetation maps                  | <input type="checkbox"/> GPS unit         |
| <input type="checkbox"/> Remotely-sensed images        | <input type="checkbox"/> Soil maps                        | <input type="checkbox"/> Stream gage data |
| <input type="checkbox"/> Topographic maps              | <input type="checkbox"/> Rainfall/precipitation data      | <input type="checkbox"/> Other studies:   |
| <input type="checkbox"/> Geologic maps                 | <input type="checkbox"/> Existing delineation(s) for site |                                           |

Other drawings (plan view), notes:

Drainage ditch appears to recieve roadside runoff and sheetflow from southeastern corner of site. Connects to ditch on east side of Dillard via 2x culverts under the road. continues N/S outside of survey area.

Other forms related to this feature:  Yes  No

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)

OHWM DATA SHEET

Project: SSEP Date: \_\_\_\_\_

Transect: 2

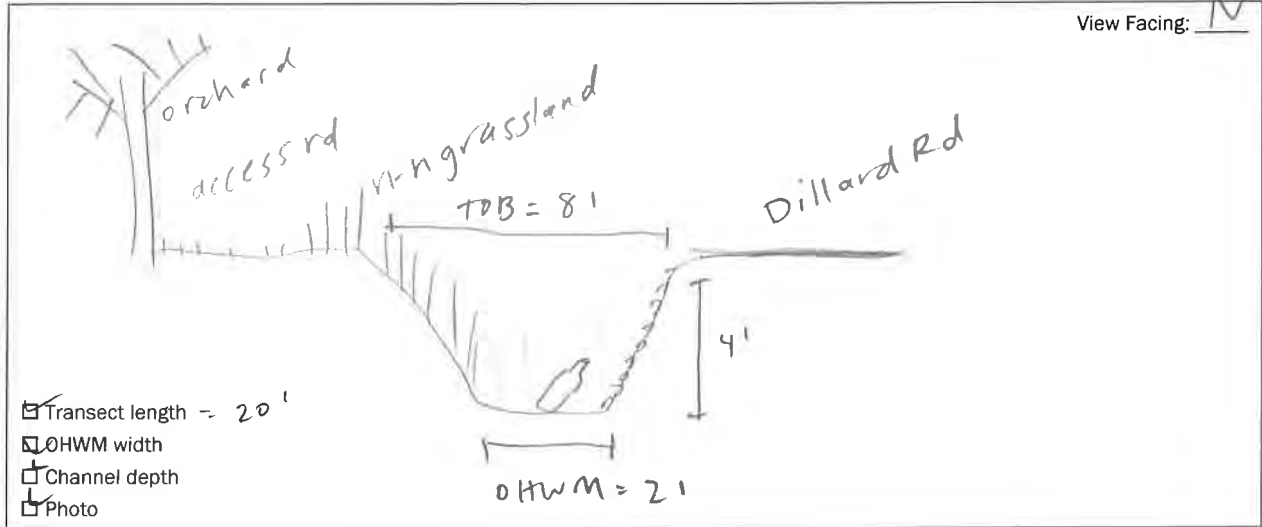
Investigator(s): ALG

Feature Name: \_\_\_\_\_

Site Location:  
drainage ditch along east side of Dillard Rd.

Feature Type:  Ephemeral  Intermittent  Perennial  Other

Transect (cross-section) drawing(s):



Break in Slope at OHWM:  Sharp (>60°)  Moderate (30-60°)  Gentle (<30°)

|                                                                             |                                                                            |
|-----------------------------------------------------------------------------|----------------------------------------------------------------------------|
| <input type="checkbox"/> Natural line impressed on the bank                 | <input type="checkbox"/> Sediment sorting                                  |
| <input type="checkbox"/> Shelving                                           | <input type="checkbox"/> Leaf litter disturbed or washed away              |
| <input type="checkbox"/> Changes in the character of soil                   | <input type="checkbox"/> Scour                                             |
| <input type="checkbox"/> Destruction of terrestrial vegetation              | <input type="checkbox"/> Deposition                                        |
| <input checked="" type="checkbox"/> Presence of litter and debris           | <input checked="" type="checkbox"/> Bed and banks                          |
| <input type="checkbox"/> Wracking                                           | <input type="checkbox"/> Water staining                                    |
| <input checked="" type="checkbox"/> Vegetation matted down, bent, or absent | <input checked="" type="checkbox"/> Change in plant community and/or cover |

|            | Clay/Silt | Sand | Gravel | Cobbles | Boulders |
|------------|-----------|------|--------|---------|----------|
| Above OHWM | 0         | 0    | 100    | 0       | 0        |
| Below OHWM | 75        | 0    | 25     | 0       | 0        |

|            | Tree (%) | Shrub (%) | Herb (%) | Bare (%) |
|------------|----------|-----------|----------|----------|
| Above OHWM | 0        | 0         | 50       | 50       |
| Below OHWM | 0        | 0         | 25       | 75       |

Stage:  Early (herbs & seedlings)  Mid (herbs, shrubs, saplings)  Late (herbs, shrubs, mature trees)

| Upland Species:                                                | Bank Species: | Emergent Species: |
|----------------------------------------------------------------|---------------|-------------------|
| <u>Bromus spp</u><br><u>Avena spp</u><br><u>Brassica nigra</u> |               |                   |



OHWL DATA SHEET

Condition/Disturbances (e.g., erosion, grazing, culverts, etc.):

High litter/debris

Hydrology:

- Flowing water
- Standing water
- Saturated
- Dry

Avg. depth:

Temp:

Min. depth:

Max. depth:

Checklist of resources (if available):

|                                                        |                                                           |                                           |
|--------------------------------------------------------|-----------------------------------------------------------|-------------------------------------------|
| <input checked="" type="checkbox"/> Aerial photography | <input checked="" type="checkbox"/> Vegetation maps       | <input type="checkbox"/> GPS unit         |
| <input type="checkbox"/> Remotely-sensed images        | <input checked="" type="checkbox"/> Soil maps             | <input type="checkbox"/> Stream gage data |
| <input type="checkbox"/> Topographic maps              | <input type="checkbox"/> Rainfall/precipitation data      | <input type="checkbox"/> Other studies:   |
| <input type="checkbox"/> Geologic maps                 | <input type="checkbox"/> Existing delineation(s) for site |                                           |

Other drawings (plan view), notes:

Feature appears to receive roadside runoff and overflow from adjacent orchard via culvert(s). Connects to ditch on west side of Dillard via 2x culverts under road. Continues N/S outside of survey area.

Other forms related to this feature:  Yes  No

- Terrace, fringe, or floodplain wetland (wetland datasheet)
- Low flow channel or other representative section (OHWM datasheet)

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# **Appendix G**

Biological Technical Report for the Sloughouse Solar  
Project

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Final Biological Technical Report

# Sloughhouse Solar Project

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**JULY 2022**

*Prepared for:*

**SLOUGHHOUSE SOLAR, LLC**

1166 Avenue of the Americas, 9th Floor  
New York, New York 10036

*Prepared by:*

**DUDEK**

1102 R. Street  
Sacramento, California 95811  
*Contact: David Hochart and Morgan Kennedy*





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F Photo Record

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# Acronyms and Abbreviations

| Acronym/Abbreviation | Definition                                 |
|----------------------|--------------------------------------------|
| AOL                  | Adjacent Other Lands                       |
| AMM                  | avoidance and minimization measure         |
| amsl                 | above mean sea level                       |
| ARD                  | Aquatic Resource Delineation               |
| BAGEPA               | Bald and Golden Eagle Protection Act       |
| BCC                  | Bird of Conservation Concern               |
| BTR                  | Biological Technical Report                |
| BUOW                 | burrowing owl                              |
| CDFW                 | California Department of Fish and Wildlife |
| CESA                 | California Endangered Species Act          |
| CEQA                 | California Environmental Quality Act       |
| CFGC                 | California Fish and Game Code              |
| CFR                  | Code of Federal Regulations                |
| CNDDB                | California Natural Diversity Database      |
| CNPS                 | California Native Plant Society            |
| CRPR                 | California Rare Plant Rank                 |
| CTS                  | California tiger salamander                |
| CWA                  | Clean Water Act                            |
| DBH                  | diameter at breast height                  |
| DCH                  | Designated Critical Habitat                |
| DPS                  | distinct population segment                |
| EFH                  | Essential Fish Habitat                     |
| EPA                  | U.S. Environmental Protection Agency       |
| FESA                 | Federal Endangered Species Act             |
| MBTA                 | Migratory Bird Treaty Act                  |
| MM                   | mitigation measure                         |
| NOP                  | Notice of Preparation                      |
| NWW                  | Non-Wetland Waters                         |
| OHWM                 | ordinary high water mark                   |
| OWCA                 | Oak Woodlands Conservation Act             |
| Porter-Cologne Act   | Porter-Cologne Water Quality Control Act   |
| Project              | Sloughhouse Solar Project                  |
| PSA                  | Project Study Area                         |
| PRC                  | California Public Resources Code           |
| Quad                 | Quadrangle                                 |
| RWQCB                | Regional Water Quality Control Board       |
| SDA                  | Solar Development Area                     |
| SSC                  | species of special concern                 |
| SSHCP                | South Sacramento Habitat Conservation Plan |

| Acronym/Abbreviation | Definition                             |
|----------------------|----------------------------------------|
| SWHA                 | Swainson's hawk                        |
| SWRCB                | State Water Resources Control Board    |
| TRBL                 | tricolored blackbird                   |
| USACE                | U.S. Army Corps of Engineers           |
| USFWS                | U.S. Fish and Wildlife Service         |
| USGS                 | U.S. Geological Survey                 |
| VELB                 | valley elderberry longhorn beetle      |
| WEAP                 | Worker Environmental Awareness Program |
| WST                  | western spadefoot toad                 |



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# Executive Summary

Sloughhouse Solar, LLC is proposing construction and operation of the Sloughhouse Solar Project (Project), a solar photovoltaic energy-generating facility adjacent to an existing solar energy facility located in the Sloughhouse community of Sacramento County, California. A Project Study Area (PSA) of 732.26 acres was evaluated for this final Biological Technical Report (BTR). The PSA includes the Project solar development area (371.72 acres), plus the remaining areas outside of the solar development area, which will be referred to herein as “adjacent other lands” (360.54 acres). The purpose of evaluating resources within the PSA was to site an area for proposed solar development that would avoid biological and aquatic resources to the maximum extent feasible. This BTR uses the final preferred environmental alternative site plan dated June 2022 to assess location and potential impacts to biological and aquatic within the solar development area (DESRI 2022).

Sloughhouse Solar, LLC has contracted Dudek to prepare this final BTR to provide an overview of biological and aquatic resources within the PSA and to identify any regulatory constraints and applicable avoidance and minimization measures and mitigation related to these resources. This final BTR provides support for lead and responsible agency analyses, determinations, and findings pursuant to the California Environmental Quality Act, and preliminary impact evaluation and mitigation planning for state and federal permitting, as needed. This final BTR includes a description of the Project; methods used to assess biological and aquatic resources, including analysis of a literature and database review; compiled field surveys; results of the assessment of biological and aquatic resources; resource impact assessments; and recommended avoidance and minimization measures and/or mitigation to reduce potential impacts. The resource evaluations presented herein refer to all resources occurring or with the potential to occur in the PSA and vicinity (i.e., up to 5 miles from the PSA), apart from Section 5, Summary of Solar Development Area Resources, and Section 6, Resources Impact Assessment of the Solar Development Area, which are explicit to only resources within the solar development area of the PSA (i.e., excludes adjacent other lands).

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# 1 Introduction

## 1.1 Purpose

Dudek has prepared this final Biological Resources Report (BTR) for the Sloughhouse Solar Project (Project). The purpose of this final BTR is to provide a complete overview of biological and aquatic resources within the Project Study Area (PSA) and to identify any regulatory constraints in relation to these resources. In addition, this final BTR provides support for lead and responsible agency analyses, determinations, and findings pursuant to the California Environmental Quality Act (CEQA) and supports impact determination and mitigation planning for state and federal permitting, as needed. This final BTR includes a description of the Project; methods used to assess biological and aquatic resources, including analysis of a literature and database review; compiled field surveys; results of the assessment of biological and aquatic resources; resource impact assessments; and recommended avoidance and minimization measures (AMMs) and/or mitigation to reduce potential impacts.

## 1.2 Project Description

The Project is a solar photovoltaic energy-generating facility located on the southwest corner of Meiss Road and Dillard Road, adjacent to an existing solar energy facility (i.e., Dillard Road Solar Power Facility) located at 7794 Dillard Road, Sacramento County, California. The Project is proposed to be developed by Sloughhouse Solar, LLC to sell its electricity and all renewable and environmental attributes to the Sacramento Municipal Utility District under long-term contracts to help meet California's Renewables Portfolio Standard goals. The Project would construct, operate, and decommission a solar generation and energy storage facility within a solar development area of approximately 371.72 acres (the solar development area, or the limits of disturbance, is inclusive of solar fields, energy storage, substation[s], roads, retention basins, etc.). The Project may also include additional auxiliary facilities such as raw water/fire water storage, treated water storage, stormwater retention basins, water filtration buildings and equipment, equipment control buildings, septic system(s), and parking within the solar development area. The design and construction of the buildings, solar arrays (panels, etc.), energy storage facilities, and auxiliary facilities will be consistent with Sacramento County building standards.

## 1.3 Project Location

The approximately 732.26-acre PSA is located at the southwest corner of the intersection of Meiss Road and Dillard Road in Sloughhouse, an unincorporated area in eastern Sacramento County (Figure 1, Project Location). The southeast portion of the PSA is comprised of an existing solar facility (Dillard Road Solar Power Facility). The remainder of the PSA is comprised of a ponded area in the southwest corner and vacant lands used for cattle ranching. The PSA is surrounded by rural residences, specifically Simpson Ranch to the south, a caviar aquaculture farm to the north, orchards and a turkey farm to the east, and the Consumes River to the west. The PSA can be accessed from gates off both Dillard Road and Meiss Road (Figure 2, Project Setting).



- County - Sacramento
- Public Land Survey System - Cosumnes Land Grant
- U.S. Geological Survey (USGS) 7.5-Minute Quadrangle (Quad) - Sloughhouse
- Latitude, Longitude (decimal degrees) - 38.473731, -121.184568 (Centroid)
- Assessor Parcel Numbers - 12601100010000, 12601100030000
- Elevation Range/Average - 95 to 160 feet above mean sea level (amsl)/128 feet amsl
- PSA - 732.26 acres

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## 2 Regulatory Setting

### 2.1 Federal

#### 2.1.1 Clean Water Act: Section 404

Pursuant to Section 404 of the Clean Water Act (CWA), the U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged and/or fill material into waters of the United States (U.S). Activities in wetlands or waters for which a USACE permit may be required include the placement of fill material due to development, land clearing involving relocation of soil, road construction, erosion control, mining, stockpiling excavation spoils, and utility line or pipeline construction. Activities that generally do not involve a regulated discharge (if performed specifically in a manner to avoid an impact) can include, to an extent, certain drainage channel maintenance activities involving the use of hand tools only or by positioning construction equipment outside of USACE jurisdiction and excavating without stockpiling in jurisdictional areas. Any person or public agency proposing to discharge dredged or fill material into waters of the U.S., including jurisdictional wetlands, must obtain a Section 404 permit from USACE.

The wetlands determination process is initiated by submitting either an Approved Jurisdictional Determination or a Preliminary Jurisdiction Determination request along with an Aquatic Resources Delineation (ARD) Report to determine if USACE-jurisdictional wetlands or other waters are present on the subject property. The wetland determination process is complete with the issuance of a written geographic jurisdictional determination verification from USACE. Compliance is required with Section 404 of the CWA if a project activity will affect verified waters of the U.S., including wetlands. The most common permits issued by the USACE Regulatory Program are Nationwide Permits, intended for those projects with minimal environmental impacts, and Individual Permits, intended for those projects that are more impactful to environmental resources.

The definition of waters of the U.S. establishes the geographic scope for jurisdiction under Section 404 of the CWA; however, the CWA does not specifically define waters of the U.S., leaving the definition open to statutory interpretation and agency rulemaking. On November 18, 2021, the U.S. Environmental Protection Agency (EPA) and USACE announced the signing of a proposed rule revising the current definition of waters of the U.S. This proposed rule obviates much of the 2020 Navigable Waters Protection Rule implemented during the Trump administration and restores the regulations in effect prior to the Obama Administration's 2015 Clean Water Rule. Moving forward, USACE and EPA propose to reinstate the pre-2015 definition of waters of the U.S. along with updates to reflect consideration of two notable Supreme Court decisions described in more detail below.

#### ***Rapanos v. United States and Carabell v. United States***

In 2007 and again in 2008, USACE and EPA developed guidance for implementing the definition of waters of the U.S. under the CWA following the *Rapanos v. United States* and *Carabell v. United States* Supreme Court decision (EPA 2008). In accordance with both the original and revised guidance, jurisdiction over these waters are as follows:

- Traditional navigable waters
- Wetlands adjacent to traditional navigable waters

- Non-navigable tributaries of traditional navigable waters that are relatively permanent (i.e., the tributaries typically flow year-round or have continuous flow at least seasonally)
- Wetlands that directly abut such tributaries

USACE and EPA decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a traditional navigable water:

- Non-navigable tributaries that do not typically flow year-round or have continuous flow at least seasonally (i.e., ephemeral stream channels)
- Wetlands adjacent to such tributaries
- Wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary

USACE and EPA apply a significant nexus evaluation to potential waters of the U.S. as follows:

- A significant nexus analysis assesses the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if in combination they significantly affect the chemical, physical, and biological integrity of downstream traditional navigable waters
- Significant nexus includes consideration of hydrologic and ecologic factors including, but not limited to, volume, duration, and the frequency of surface water flow in the resource and its proximity to a traditional navigable water, and the functions performed by the resource on adjacent wetlands.

### *Solid Waste Agency of Northern Cook County v. USACE*

In 2001 and again in 2003, the agencies developed guidance to address the above definition of waters of the U.S. under the CWA following the *Solid Waste Agency of Northern Cook County v. USACE* U.S. Supreme Court decision that “isolated, non-navigable, intrastate” waters could not be claimed as jurisdictional by USACE based on their use by migratory birds (EPA 2000). Although the Supreme Court did not specifically address the meaning of the word “isolated,” it upheld the above definition of “adjacent” wetlands (and other waters), which are by definition wetlands that are “bordering, contiguous, or neighboring” other jurisdictional waters. Therefore, the term “isolated wetland” has implicitly been defined as wetlands that are not bordering, contiguous, or neighboring other waters. The 2001 decision did not, however, define the term “adjacent,” nor did it state whether the basis for adjacency is geographic proximity or hydrology. As established by the Supreme Court in *United States v. Riverside Bayview Homes Inc.* in 1985, “wetlands separated from other waters by man-made dikes or barriers, natural river berms, beach dunes, and the like are ‘adjacent wetlands.’”

### Current (Proposed) Definition of Waters of the U.S., Including Wetlands

As currently proposed by USACE and EPA, the term waters of the U.S. include the following (86 Code of Federal Regulations [CFR] 69372-69450):

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. "Other Waters" that meet either the "Relatively Permanent Standard" or the "Significant Nexus Standard." All Other Waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce including any such waters:
  - a. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
  - b. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
  - c. Which are used or could be used for industrial purposes by industries in interstate commerce;
4. All impoundments, and wetlands adjacent to impoundments, that meet either the Relatively Permanent Standard or the Significant Nexus Standard;
5. Tributaries of waters;
6. The territorial seas; and
7. Wetlands adjacent to waters (other than waters that are themselves wetlands), and waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition) are not waters of the U.S.

The Relatively Permanent Standard refers to waters that are relatively permanent, standing, or continuously flowing, and waters with a continuous surface connection to such waters. The Significant Nexus Standard refers to waters that either alone, or in combination with similarly situated waters in the region, significantly affect the chemical, physical, or biological integrity of traditional navigable waters, interstate waters, or the territorial seas (86 CFR 69372-69450).

Wetlands are "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3). USACE predominantly relies on the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (USACE 1987), and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region – Version 2.0* (USACE 2008a) methodology to determine the presence of jurisdictional wetlands in California. USACE relies on the presence of three criteria to determine if an area is a wetland: hydrophytic vegetation, hydric soils, and hydrology. Hydrophytic vegetation refers to a



predominance of plant life that is adapted to life in wet conditions. Hydric soils refer to soils that saturate, flood, or pond long enough during the growing season to develop anaerobic conditions in the upper part. Hydrology refers to the presence of water, either above the soil surface or within the upper 12 to 18 inches of the soil profile just below the soil surface (USACE 1987).

For linear, non-wetland waters of the U.S. (e.g., perennial, intermittent, or ephemeral drainages), the lateral limits of USACE jurisdiction extend to the reliable ordinary high water mark (OHWM). As defined in the CFR Title 33, Section 328.3(e), the OHWM is “that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.” If wetlands are present adjacent to such resources and they meet the Relatively Permanent Standard or the Significant Nexus Standard, then jurisdiction would likely extend to the limit of these wetlands (86 CFR 69372-69450). Further guidance for determining jurisdictional limits in Washington is detailed in USACE’s *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008b).

## 2.1.2 Clean Water Act: Section 401

Section 401 of the CWA provides states and authorized tribes with a valuable tool to help protect the water quality of federally regulated waters within their borders (i.e., waters of the state), in collaboration with federal agencies.

On June 1, 2020, the EPA finalized the 2020 CWA Section 401 Certification Rule (i.e., the 2020 Rule). The 2020 rule became effective on September 11, 2020. The 2020 Rule was vacated on October 21, 2021, and the vacatur was stayed on April 6, 2022, so the 2020 Rule is currently in effect (EPA 2022).

As such, the EPA’s regulations at 40 CFR 121 address CWA Section 401 certification generally. Under Section 401 of the CWA, a federal agency may not issue a permit or license to conduct any activity that may result in any discharge into waters of the U.S. unless a CWA Section 401 water quality certification is issued, or certification is waived. States and authorized tribes where the discharge would originate are generally responsible for issuing water quality certifications. In cases where a state or tribe does not have authority, EPA is responsible for issuing certification. In making decisions to grant, grant with conditions, or deny certification requests, certifying authorities consider whether the federally licensed or permitted activity will comply with applicable water quality standards, effluent limitations, new source performance standards, toxic pollutants restrictions, and other appropriate water quality requirements of state or tribal law. A federal agency may not issue a license or permit for an activity that may result in a discharge into waters of the U.S. without a water quality certification or waiver (EPA 2022).

### Implementation in California

The California State Water Resources Control Board (SWRCB) has authority over waters of the state, including wetlands, through Section 401 of the CWA, the Porter-Cologne Water Quality Control Act (Porter-Cologne Act), California Code of Regulations Section 3831(k), and the California Wetlands Conservation Policy. The CWA requires that an applicant for a Section 404 permit (to discharge dredge or fill material into waters of the U.S.) first obtain certification from the appropriate state agency stating that the fill is consistent with the state’s water quality standards and criteria. In California, the authority to either grant certification or waive the requirement for permits is delegated by the SWRCB to the nine regional boards. The Central Valley Regional Water Quality Control Board

(RWQCB) has authority for Section 401 compliance in the Project region. A request for Water Quality Certification is submitted to the RWQCB while an application is filed with USACE (EPA 2022).

### 2.1.3 Federal Endangered Species Act

The Federal Endangered Species Act (FESA) of 1973, as amended (16 USC 1531 et seq.), serves as the enacting legislation to list, conserve, and protect threatened and endangered species, and the ecosystems on which they depend, from extinction. In addition, for those wildlife species listed as federally endangered, FESA provides for the ability to designate critical habitat, defined as that habitat considered “essential to the conservation of the species” and that “may require special management considerations or protection.”

Under FESA Section 7, if a project that would potentially result in adverse impacts to threatened or endangered species includes any action that is authorized, funded, or carried out by a federal agency, that agency must consult with the U.S. Fish and Wildlife Service (USFWS) to ensure that any such action is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat for that species. FESA Section 9(a)(1)(B) prohibits the taking, possession, sale, or transport of any endangered fish or wildlife species. “Take” is defined to mean “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct” (16 USC 1532[19]). With respect to any endangered species of plant, Sections 9(a)(2)(A) and 9(a)(2)(B) prohibit the possession, sale, and import or export, of any such species, and prohibits any action that would “remove and reduce to possession any such species from areas under federal jurisdiction; maliciously damage or destroy any such species on any such area; or remove, cut, dig up, or damage or destroy any such species on any other area in knowing violation of any law or regulation of any State or in the course of any violation of a State criminal trespass law.” Pursuant to FESA Section 10(a)(1)(B), USFWS may issue a permit for the take of threatened or endangered species if such taking is “incidental to, and not the purpose of, the carrying out of an otherwise lawful activity” (USFWS 2022).

### 2.1.4 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) regulates or prohibits taking, killing, possession of, or harm to migratory bird species listed in Title 50, Section 10.13 of the CFR. The MBTA is an international treaty for the conservation and management of bird species that migrate through more than one country and is enforced in the United States by USFWS. Hunting of specific migratory game birds is permitted under the regulations listed in Title 50, Section 20 of the CFR. The MBTA was amended in 1972 to include protection for migratory birds of prey (raptors) (USFWS 2021a).

### 2.1.5 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BAGEPA) (16 USC 668 et seq.) provides for the protection of both bald and golden eagles. Specifically, BAGEPA prohibits take of eagles, which is defined as any action that would “pursue, destroy, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb” bald and golden eagles, including parts, nests, or eggs. The term “disturb” is further defined by regulation as “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, injury to an eagle, a decrease in productivity, or nest abandonment” (50 CFR 22.3). Under BAGEPA, it is also illegal to “sell, purchase, barter, trade, import, or export, or offer for sale, purchase, barter, or trade, at any time or in any manner, any bald eagle or any golden eagle, or the parts, nests, or eggs” of these birds. Pursuant to 50 CFR 22.26, and as of the latest amendment to BAGEPA in

December 2016, a permit may be obtained that authorizes take of bald eagles and golden eagles where the take is “compatible with the preservation of the bald eagle and the golden eagle; is necessary to protect an interest in a particular locality; is associated with, but not the purpose of, the activity; and cannot practicably be avoided” (USFWS 2021b).

## 2.2 State of California

### 2.2.1 California Department of Fish and Game Code

Divisions of the California Fish and Game Code (CFGC) establish the basis of fish, wildlife, and native plant protections and management in the state.

#### 2.2.1.1 California Endangered Species Act

Under the California Endangered Species Act (CESA), the California Department of Fish and Wildlife (CDFW) has the responsibility of maintaining a list of threatened and endangered species. CESA prohibits the take of state-listed threatened or endangered animals and plants unless otherwise permitted pursuant to CESA. “Take” under CESA is defined as any of the following: “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill” (CFGC Section 86). Species determined by the state to be candidates for listing as threatened or endangered are treated as if listed as threatened or endangered and are, therefore, protected from take. Pursuant to CESA, a state agency reviewing a project within its jurisdiction must determine whether any state-listed endangered or threatened species, or candidate species, could be potentially impacted by that project (CDFW 2021a).

#### 2.2.1.2 California Oak Woodlands Conservation Act and Oak Protection

The 2005 CFGC Sections 1360–1372 outline the terms and conditions comprising the California Oak Woodlands Conservation Act (OWCA) (CLI 2016). An oak woodland is defined as an oak stand with greater than 10% canopy cover, or that may have historically supported greater than 10% canopy cover. The overall purpose of the OWCA is to provide funding for the conservation and protection of California’s oak woodlands. In addition, the OWCA is designed to support and encourage voluntary, long-term private stewardship and conservation of California’s oak woodlands by offering landowners financial incentives to protect and promote biologically functional oak woodlands over time, as mandated by the Wildlife Conservation Board. The Wildlife Conservation Board has established programs, including the California Oak Woodlands Conservation Program, to protect and restore oak woodlands. The OWCA encourages and defers to local jurisdictions to develop and implement oak conservation plans developed under the OWCA (WCB 2021).

Furthermore, the California Public Resources Code (PRC) Section 21083.4 defines an oak as a native tree species in the genus *Quercus*, not designated as commercial species (i.e., Groups A and B) pursuant to regulations adopted by the State of California Board of Forestry and Fire Protection (i.e., Section 4526), that is 5 inches or more in diameter at breast height (DBH) (i.e., diameter of a tree measured 4.5 feet above natural grade). In addition, the PRC defines a 10% canopy cover stipulation that pertains to an individual stand of vegetation, and not all oaks within an entire project site. PRC 21083.4 does not apply to oak woodlands dominated by black oak (*Quercus kelloggii*). As part of the determination made pursuant to PRC Section 21080.1, it is the responsibility of a county to determine if a project under its jurisdiction would result in a significant effect on the environment resulting from

a conversion of an oak woodland. When a county determines that a project could result in significant impacts to oak woodlands, mitigation measures (MMS) are required and may be selected from several mitigation alternatives set forth in PRC Section 21083.4(b).

### 2.2.1.3 Lake and Streambed Alteration Program

Under Sections 1600–1616 of the CFGC, CDFW regulates activities that would alter the flow, bed, channel, or bank of streams and lakes. The limits of CDFW’s jurisdiction are defined in the code as the “bed, channel or bank of any river, stream, or lake designated by the department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit.” In practice, CDFW usually marks its jurisdictional limit at the top of the stream or bank, or at the outer edge of the riparian vegetation, whichever is wider (CDFW 2021b).

### 2.2.1.4 Native Plant Protection Act

The Native Plant Protection Act was enacted in 1977 and is administered by CDFW, per CFGC Section 1900 et seq. The Native Plant Protection Act prohibits take of endangered, threatened, or rare plant species native to California, apart from special criteria identified in the CFGC. A “native plant” means a plant growing in a wild uncultivated state that is normally found native to the plant life of the state. A “rare” species can be defined as species that are broadly distributed but never abundant where found, narrowly distributed, or clumped yet abundant where found, and/or narrowly distributed or clumped and not abundant where found. If potential impacts are identified for a project activity, then consultation with CDFW, permitting, and/or other mitigation may be required (CLI 2021).

### 2.2.1.5 Nesting Migratory Birds and Raptors

Section 3503 of the CFGC states that it is unlawful to take, possess, or needlessly destroy the nests or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Section 3503.5 protects all birds of prey (raptors) and their eggs and nests. Section 3511 states that fully protected birds or parts thereof may not be taken or possessed at any time. Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the MBTA.

### 2.2.1.6 California Fish and Game Code Section 4150

CFGC Section 4150 states a mammal occurring naturally in California that is not a game mammal, fully protected mammal, or fur-bearing mammal is a non-game mammal. A non-game mammal may not be taken or possessed under this code. All bat species occurring naturally in California are considered non-game mammals and are therefore prohibited from take as stated in CFGC Section 4150.

### 2.2.1.7 California Fish and Game Code Section 1940

Section 1940 of the CFGC requires CDFW to develop and maintain a vegetation mapping standard for the state. More than half of the vegetation communities in the state have been mapped through the Vegetation Classification and Mapping Program.

Natural vegetation communities are evaluated by CDFW and are assigned global (G), and state (S) ranks based on rarity of and threats to these vegetation communities in California. Sensitive natural communities are defined by



CDFW as vegetation alliances with state ranks of S1–S3 (S1: critically imperiled, S2: imperiled, S3: vulnerable), as identified in the 2010 List of Vegetation Alliances and Associations and subsequent updates. Natural communities with ranks of S1–S3 are considered sensitive natural communities to be addressed in the environmental review processes of CEQA and its equivalents. Additionally, all vegetation associations within the alliances with ranks of S1–S3 are considered sensitive habitats. CEQA requires that impacts to sensitive natural communities be evaluated and mitigated to the extent feasible.

Sensitive natural communities are communities that have a limited distribution and are often vulnerable to the environmental effects of projects. These communities may or may not contain special-status species or their habitats. For purposes of this assessment, sensitive natural communities are considered to include vegetation communities listed in CDFW's California Natural Diversity Database (CNDDB) and communities listed in the Natural Communities List with a rarity rank of S1- S3 (CDFW 2021c).

### 2.2.1.8 Porter-Cologne Water Quality Control Act

As detailed above in Section 2.1.2, Clean Water Act: Section 401, The Porter-Cologne Act, CFGC Sections 1601–1607, delegates responsibility to the SWRCB for water rights and water quality protection and directs the nine statewide RWQCBs to develop and enforce water quality standards within their jurisdiction. The Porter-Cologne Act requires any entity discharging waste, or proposing to discharge waste, within any region that could affect the quality of the waters of the state to file a “report of waste discharge” with the appropriate RWQCB. The appropriate RWQCB then must issue a permit, referred to as a Waste Discharge Requirement. Waste Discharge Requirements implement water quality control plans and take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, and the need to prevent nuisances (SWRCB 2019).

The SWRCB defines a water of the state as “any surface water or groundwater, including saline waters, within the boundaries of the state” (California Water Code Section 13050[e]). As of April 2019, the SWRCB has defined “wetland” to include the following (SWRCB 2019):

1. Natural wetlands,
2. Wetlands created by modification of a surface water of the state,
3. Artificial wetlands that meet any of the following criteria:
  - a. Approved by an agency as compensatory mitigation for impacts to other Waters of the State, except where the approving agency explicitly identifies the mitigation as being of limited duration;
  - b. Specifically identified in a Water Quality Control Plan as a wetland or other water of the state;
  - c. Resulted from historic human activity, is not subject to ongoing operation and maintenance, and has become a relatively permanent part of the natural landscape; or
  - d. Greater than or equal to one acre in size unless the artificial wetland was constructed and is currently used and maintained, primarily for one or more of the following purposes: industrial or municipal wastewater treatment or disposal; settling of sediment; detention, retention, infiltration, or treatment of stormwater runoff and other pollutants or runoff subject to regulation under a municipal, construction, or industrial permitting program; treatment of surface waters; agricultural crop irrigation

or stock watering; fire suppression; industrial processing or cooling water; active surface mining – even if the site is managed for interim wetlands functions and values; log storage; treatment, storage, or distribution of recycled water; maximizing groundwater recharge (this does not include wetlands that have incidental groundwater recharge benefits); or fields flooded for rice growing.

All waters of the U.S. are waters of the state. Wetlands, such as isolated seasonal wetlands, that are not generally considered waters of the U.S. are considered waters of the state if, “under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area’s vegetation is dominated by hydrophytes or the area lacks vegetation” (SWRCB 2019).

## 2.2.2 California Environmental Quality Act

CEQA, PRC Section 21000 et seq., requires public agencies undertaking discretionary actions to approve a project to first determine whether a project may have a significant effect on the environment, and then to prepare an environmental impact report if there is substantial evidence that the project may have a significant effect on the environment. Where an environmental impact report has been prepared, CEQA further requires public agencies to adopt findings with respect to each significant effect that “changes or alterations have been required in, or incorporated, into the project which mitigate or avoid the significant effects on the environment; that those changes are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency; or that specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or alternatives identified in the environmental impact report” (PRC Section 21081[a]).

The California Natural Resources Agency has adopted regulations (i.e., guidelines) to implement CEQA. Pursuant to CEQA Guidelines Section 15380, protection is provided for federal and/or state-listed species, as well as species not listed federally or by the state that may be considered rare, threatened, or endangered. Species that meet these criteria can include candidate species, species proposed for listing, and species of special concern. Plants listed in the California Native Plant Society (CNPS) Rare Plant Program are considered to meet CEQA’s Section 15380 criteria as well. Section 15380 also addresses a potential situation in which a public agency is to review a project that may have a significant effect on, for example a candidate species, which has not yet been listed by USFWS or CDFW. Therefore, CEQA enables an agency to protect a species from significant project impacts until the respective government agencies have had an opportunity to list the species as protected, if warranted. Impacts to these species would therefore be considered significant, requiring mitigation (CDFW 2021d).

## 2.2.3 California Department of Fish and Wildlife Special Plants

For the purposes of this analysis, special plant species are defined as plants that are legally protected or that are otherwise considered sensitive by federal, state, or local resource conservation agencies. These species fall into one or more of the following categories:

- Listed by the federal government under the FESA of 1973 or the State of California under the CESA of 1970 as endangered, threatened, or rare
- A candidate for federal or state listing as endangered or threatened

- Taxa that are biologically rare, very restricted in distribution, or declining throughout their range but not currently threatened with extirpation
- Population(s) in California that may be peripheral to the major portion of a taxon's range but are threatened with extirpation in California
- Taxa strongly associated with a habitat that is declining in California at a significant rate (e.g., wetlands, riparian, vernal pools, old growth forests, desert aquatic systems, native grasslands, valley shrubland habitats)

Taxa considered to be "rare, threatened, or endangered in California" as defined by CDFW are assigned a California Rare Plant Rank (CRPR). The CDFW system includes six rarity and endangerment ranks for categorizing plant species of concern, as follows:

- CRPR 1A – Plants presumed to be extinct in California
- CRPR 1B – Plants that are rare, threatened, or endangered in California and elsewhere
- CRPR 2A – Plants presumed to be extinct in California, but more common elsewhere
- CRPR 2B – Plants that are rare, threatened, or endangered in California, but more common elsewhere
- CRPR 3 – Plants about which more information is needed (a review list)
- CRPR 4 – Plants of limited distribution (a watch list)

Plants ranked as CRPR 1A, 1B, 2A, or 2B may qualify as endangered, rare, or threatened species within the definition of CEQA Guidelines Section 15380. CDFW recommends that potential impacts to CRPR 1 and 2 species be evaluated in CEQA review documents. In general, CRPR 3 and 4 species do not meet the definition of endangered, rare, or threatened pursuant to CEQA Guidelines Section 15380, but these species may be evaluated on a case-by-case basis (CNPS 2021a).

## 2.2.4 Other State Tree Protection Regulations

Additional state laws that regulate and/or protect oaks and oak woodlands include the Professional Foresters Law, CEQA, and the Board of Forestry and Fire Protection. The Professional Foresters Law addresses oak habitat evaluations. Both the Professional Foresters Law and CEQA apply to all local jurisdictions. Since it is a state agency, the Board of Forestry and Fire Protection has regulatory authority over all of California's forested landscapes, including the authority to regulate oak woodlands at the state or local level.

## 2.3 County

### 2.3.1 Sacramento County General Plan

The Sacramento County General Plan addresses policies to help preserve and restore vegetation, wildlife, biological habitat, and aquatic resources throughout Sacramento County, including ways to ensure that these important

natural resources are given adequate attention in development projects and master planning efforts. Additionally, the Open Space Element of the General Plan describes protection measures and provides a management/acquisition for continued preservation and protection of Sacramento County's natural resource habitats. The sections below provide an overview of General Plan Conservation Elements pertaining to biological and aquatic resources in Sacramento County (Sacramento County 2017).

### 2.3.1.1 Vegetation and Wildlife Conservation Element

#### Habitat Protection and Management

Goal: Preserve and manage natural habitats and their ecological functions throughout Sacramento County.

#### Habitat Mitigation

Objective: Mitigate and restore for natural habitat and special-status species loss.

Policies:

- CO-58. Ensure no net loss of wetlands, riparian woodlands, and oak woodlands.
- CO-59. Ensure mitigation occurs for any loss of or modification to the following types of acreage and habitat function: (1) vernal pools, (2) wetlands, (3) riparian, (4) native vegetative habitat, and (5) special-status species habitat.
- CO-60. Mitigation should be directed to lands identified on the Open Space Vision Diagram and associated component maps.
- CO-61. Mitigation should be consistent with Sacramento County-adopted habitat conservation plans.
- CO-62. Permanently protect land required as mitigation.

#### Habitat Preserve and Management

Objective: Establish and manage a preserve system with large core and landscape level preserves connected by wildlife corridors throughout Sacramento County to protect ecological functions and species populations.

Policies:

- CO-64. Consistent with overall land use policies, the County shall support and facilitate the creation and biological enhancement of large natural preserves or wildlife refuges by other government entities or by private individuals or organizations.
- CO-65. Create a network of preserves linked by wildlife corridors of sufficient size to facilitate the movement of species.
- CO-66. Mitigation sites shall have a monitoring and management program including an adaptive management component including an established funding mechanism. The



programs shall be consistent with Habitat Conservation Plans that have been adopted or are in draft format.

- CO-67. Preserves and conservation areas should have an established funding mechanism, and where needed, an acquisition strategy for its operation and management in perpetuity. This includes existing preserves such as the American River Parkway, Dry Creek Parkway, Cosumnes River Preserve and other plans in progress for riparian areas like Laguna Creek.
- CO-68. Preserves shall be planned and managed to the extent feasible to avoid conflicts with adjacent agricultural activities.
- CO-69. Avoid, to the extent possible, the placement of new major infrastructure through preserves unless located along disturbed areas, such as existing roadways.

## Habitat Protection and Project Review

**Objective:** Review development plans and projects to ensure a balance between essential growth needs and the protection and preservation of natural habitats and special-status species.

**Policies:**

- CO-70. Community Plans, Specific Plans, Master Plans and development projects shall: 1- include the location, extent, proximity and diversity of existing natural habitats and special-status species in order to determine potential impacts, necessary mitigation and opportunities for preservation and restoration; 2- be reviewed for the potential to identify nondevelopment areas and establish preserves, mitigation banks and restore natural habitats, including those for special-status species, considering effects on vernal pools, groundwater, flooding, and proposed fill or removal of wetland habitat; and 3- be reviewed for applicability of protection zones identified in this Element, including the Floodplain Protection Zone, Stream Corridor Ordinance, Cosumnes River Protection Combining Zone and the Laguna Creek Combining Zone.
- CO-71. Development design shall help protect natural resources by: (1) Minimizing total built development in the floodplain, while designing areas of less frequent use that can support inundation to be permitted in the floodplain; (2) Ensuring development adjacent to stream corridors and vernal pools provide, where physically reasonable, a public street paralleling at least one side of the corridor with vertical curbs, gutters, foot path, street lighting, and post and cable barriers to prevent vehicular entry; (3) Projects adjacent to rivers and streams shall integrate amenities, such as trail connectivity, that will serve as benefits to the community and ecological function; (4) Siting of wetlands near residential and commercial areas should consider appropriate measures to minimize potential for mosquito habitation; and (5) Development adjacent to stream corridors and vernal pools shall be designed in such a manner as to prevent unauthorized vehicular entry into protected areas.
- CO-72. If land within river and stream watersheds in existing agricultural areas is developed for non-agricultural purposes, the County should actively pursue easement dedication for recreation trails within such development as a condition of approval.

- CO-73. Secure easement or fee title to open space lands within stream corridors as a condition of development approval.
- CO-74. Evaluate feasible on-site alternatives early in the planning process and prior to the environmental review process that reduce impacts on wetland and riparian habitat and provide effective on-site preservation in terms of minimum management requirements, effective size, and evaluation criteria.

### Special-Status Species and Their Respective Habitats

Goal: Preserve, enhance, and restore special-status species habitat in Sacramento County to aid in the recovery of these species.

#### Protection of Special-Status Species

Objective: Protect and maintain habitat for special-status species.

Policies:

- CO-75. Maintain viable populations of special-status species through the protection of habitat in preserves and linked with natural wildlife corridors.
- CO-77. Development of open space acquisition programs within natural areas shall consider whether the area is occupied by special-status species.

#### Manage Lands for Special-Status Species

Objective: Manage and maintain special-status species and their respective habitat in a manner that resolves conflicts with adjacent privately owned-land and agricultural operations.

Policies:

- CO-80. Control human access to sensitive habitat areas on public lands to minimize impact upon and disturbance of special-status species.
- CO-82. Ensure that mosquito control measures have the least effect on non-target species.

### 2.3.1.2 Aquatic Resources Conservation Element

#### Vernal Pools

Goal: Preserve and enhance self-sustaining vernal pool habitats.

#### Vernal Pools Preserves

Objective: Establish vernal pool preserves that enhance and protect the ecological integrity of vernal pool resources.

Policies:

- CO-83. Preserve a representative portion of vernal pool resources across their range by protecting vernal pools on various geologic landforms, vernal pools that vary in depth and size, and vernal pool complexes of varying densities; to maintain the ecological integrity of a vernal pool ecosystem.
- CO-84. Ensure that vernal pool preserves are large enough to protect vernal pool ecosystems that provide intact watersheds and an adequate buffer, have sufficient number and extent of pools to support adequate species populations and a range of vernal pool types.
- CO-85. Utilize proper vernal pool restoration techniques as approved by the USFWS, the CDFW, and the USACE.
- CO-86. Limit land uses within established preserves to activities deemed compatible with maintenance of the vernal pool resource, which may include ranching, grazing, scientific study, and education.

## Rivers and Streams

Goal: Preserve, protect, and enhance natural open space functions of riparian, stream, and river corridors.

### Riparian Habitat

Objective: Manage riparian corridors to protect natural, recreational, economic, agricultural, and cultural resources as well as water quality, supply, and conveyance.

Policies:

- CO-87. Encourage private landowners to protect, enhance and restore riparian habitat.
- CO-88. Where removal of riparian habitat is necessary for channel maintenance, it will be planned and mitigated to minimize unavoidable impacts upon biological resources.
- CO-89. Protect, enhance, and maintain riparian habitat in Sacramento County.
- CO-90. Increase riparian woodland, valley oak riparian woodland and riparian scrub habitat along select waterways within Sacramento County.
- CO-91. Discourage introductions of invasive non-native aquatic plants and animals.
- CO-92. Enhance and protect shaded riverine aquatic habitat along rivers and streams.

### Limitation of Fill in Floodplains

Objective: Maintain the natural character of the 100-year floodplain by limiting fill and excavation.

Policies:

- CO-93. Discourage fill in the 100-year floodplain.

- CO-94. Development within the 100-year floodplain and designated floodway of Sacramento streams, sloughs, creeks, or rivers shall be: 1- Consistent with policies to protect wetlands and riparian areas; and 2- Limited to land uses that can support seasonal inundation.
- CO-95. Development within the 100-year floodplain should occur in concert with the development of the Floodplain Protection Zone.

## Bank Stabilization

**Objectives:** Maintain levee protection, riparian vegetation, function and topographic diversity by stream channel and bank stabilization projects. Stabilize riverbanks to protect levees, water conveyance and riparian functions.

**Policies:**

- CO-96. Reduce dependence on traditional levee protection methods where those methods conflict with habitat preservation efforts and where alternate methods exist which are compatible with preservation efforts and offer an acceptable level of bank stabilization.
- CO-97. Work with appropriate regulatory agencies to reduce bank and levee erosion by minimizing erosive wake activity generated by recreational and commercial boating.
- CO-98. Coordinate with federal, state, and local agencies overseeing levee and bank stabilization to investigate and, whenever possible, utilize biotechnical or nonstructural alternatives to other conventional stabilization methods.
- CO-99. Encourage habitat restoration and recreational opportunities as an integral part of bank and levee stabilization efforts.
- CO-100. Encourage construction of structures for flood control and stormwater quality purposes using currently approved scientific methods to prevent erosion and stabilize the banks.
- CO-101. Stabilize the banks of rivers and streams in a manner that increases flood protection and increases riparian habitat functions.

## Protection of Rivers

**Objective:** Conserve and protect the Sacramento, Cosumnes, Mokelumne and American Rivers to preserve natural habitat and recreational opportunities.

**Policies:**

- CO-102. Promote and encourage habitat restoration efforts on and adjacent to our river floodways.
- CO-103. Protect the Cosumnes River Corridor by promoting the preservation of agriculture, natural habitat, and limited recreational uses adjacent to the river channel, and when feasible by acquiring appropriate lands or easements adjacent to the river.



## Channel Modifications

Objective: Protect and restore natural stream functions.

Policies:

- CO-105. Channel modification projects shall be considered for approval by the Board of Supervisors only after conducting a noticed public hearing examining the full range of alternatives, relative costs and benefits, and environmental, economic, and social benefits.
- CO-105a. Encourage flood management designs that respect the natural topography and vegetation of waterways while retaining flow and functional integrity.
- CO-106. Realigned or modified channels should retain topographic diversity including maintaining meandering characteristics, varied berm width, naturalized side slope, and varied channel bottom elevation.
- CO-107. Maintain and protect natural function of channels in developed newly developing, and rural areas.
- CO-108. Channel lowering should occur after consideration of alternatives and only when it is necessary to accommodate the gravity drainage of storm runoff and/or accommodate flood flows under existing bridge structures.
- CO-109. Channel modifications should not prevent minimum water flows necessary to protect and enhance fish habitats, native riparian vegetation, water quality, or ground water recharge.
- CO-110. Improvements in watercourses will be designed for low maintenance. Appropriate Manning's "n" 13 values will be used in design of the watercourses to reflect future vegetative growth (including mitigation plantings) associated with the low maintenance concept.
- CO-111. Channel modifications shall retain wetland and riparian vegetation whenever possible or otherwise recreate the natural channel consistent with the historical ecological integrity of the stream or river.
- CO-112. The use of concrete and impervious materials is discouraged where it is inconsistent with the existing adjacent watercourse and overall ecological function of the stream.
- CO-113. Encourage revegetation of native plant species appropriate to natural substrate conditions and avoid introduction of nonindigenous species.

## Land Use Adjacent to Rivers and Streams

Objective: Land uses within and development adjacent to stream corridors are to be consistent with natural values.

Policies:

- CO-114. Protect stream corridors to enhance water quality, provide public amenities, maintain flood control objectives, preserve, and enhance habitat, and offer recreational and educational opportunities.

- CO-115. Provide setbacks along stream corridors and stream channels to protect riparian habitat functions. (1) A functional setback of at least 100 feet and measured from the outside edge of the stream bank should be retained on each side of a stream corridor that prohibits development or agricultural activity. This buffer is necessary to protect riparian functions by allowing for the filtering of sediment, pesticides, phosphorus and nitrogen, organic matter and other contaminants that are known to degrade water quality. This buffer also provides for the protection of vegetation along the stream bank which provides bank stability, erosion control and flood attenuation; (2) A transitional setback of at least 50 feet in width beyond the functional buffer should be retained along all stream corridors. This buffer is necessary to protect hydrogeomorphic functions that regulate water temperature, regulate microclimate, maintain channel complexity, and retain hydrologic flow regimes. This buffer also provides corridors to facilitate the movement of wildlife; (3) An extended setback of at least 50 feet in width beyond the transitional setback should be retained along all stream corridors. This setback will allow for recreational uses such as bike, pedestrian and/or equestrian trails and will allow for the placement of infrastructure such as water and sewer lines; (4) Stormwater discharge ponds or other features used for improving stormwater quality may be located within the extended or transitional setback area. However, to protect stream habitat and floodplain value, the width of the setback shall not be based upon the width of the pollutant discharge pond. The ponds shall be landscaped and maintained with vegetation native to the surrounding area. Detention ponds or other features implementing pollutant discharge requirements, other than approved regional stormwater quality practices that are designed and operated to complement the corridor functionally and aesthetically, are prohibited; (5) Setback averaging within individual development projects or as otherwise specified in a Sacramento County-adopted master plan will be permitted except when riparian woodland will be lost. The minimum width of setbacks cannot fall below 50 feet; and (6) Master drainage plans may provide for other standards that meet the intent of this policy.
- CO-116. Encourage filter strips using appropriate native vegetation and substrate along riparian streambanks adjacent to irrigated croplands.
- CO-117. Public roads, parking, and associated fill slopes shall be located outside of the stream corridor, except at stream crossings and for purposes of extending or setting back levees. The construction of public roads and parking should utilize structural materials to facilitate permeability. Crossings shall be minimized and be aesthetically compatible with naturalistic values of the stream channel.
- CO-118. Development adjacent to waterways should protect the water conveyance of the system, while preserving and enhancing the riparian habitat and its function.

## Maintenance of Rivers and Streams

Objective: Properly manage and fund the maintenance of rivers and streams to protect and enhance natural functions.

Policies:

- CO-120. Development projects adjacent to rivers and streams shall provide unencumbered maintenance access.
- CO-121. No grading, clearing, tree cutting, debris disposal or any other despoiling action shall be allowed in rivers and streams except for normal channel maintenance, restoration activities, and road crossings.
- CO-122. River and stream maintenance should allow natural vegetation in and along the channel to assist in removal of nutrients, pollutants, and sediment and to increase bank stabilization, while minimizing impacts on conveyance.
- CO-123. The use of native plant species shall be encouraged on revegetation plans.
- CO-124. Maintain and manage rivers and streams to encourage special-status species.

### Restoration of Rivers and Streams

Objective: Restore concrete sections of rivers and streams to increase natural functions

Policies:

- CO-125. Restore concrete sections of rivers and streams to natural or naturalized channels, where feasible for increased flood or conveyance capacity and groundwater recharge.

### Fisheries

Goal: Preserve and protect fisheries in the Sacramento County waterways and water bodies.

### In-Stream Functions

Objective: Provide and protect high quality in-stream habitat, water quality and water flow to support fisheries propagation, development, and migration.

Policies:

- CO-126. Prohibit obstruction or underground diversion of natural waterways.
- CO-127. Protect, preserve, and restore migratory routes for anadromous species.
- CO-128. Require screens on diversion pumps or similar bypass apparatus to reduce fish mortality. CO-129. Require screening on all public water diversion facilities.
- CO-130. Protect, enhance, and restore riparian, in-channel, and shaded riverine aquatic habitat for: (1) spawning and rearing of fish species, including native and recreational non-native, non-invasive species, where they currently spawn; (2) potential areas where natural spawning could be sustainable; and (3) supporting other aquatic species.

### 2.3.1.3 Terrestrial Resources Conservation Element

#### Native Vegetation Protection, Restoration and Enhancement

Objective: Tree and native vegetation management practices to promote regeneration in designated resource conservation areas.

Policies:

- CO-132. Protect native vegetative habitats from improper grazing regimes on public lands and inform private land operators of how they may minimize impacts to these habitats.
- CO-133. Prohibit native vegetative habitat mitigation and/or other public plantings onto incompatible substrates i.e., tree planting in vernal pool hardpan.
- CO-134. Maintain and establish a diversity of native vegetative species in Sacramento County.
- CO-135. Protect the ecological integrity of California Prairie habitat.
- CO-136. Prohibit the loss of mitigated resource areas.
- CO-137. Mitigate for the loss of native trees for road expansion and development consistent with General Plan policies and/or the Sacramento County Tree Preservation Ordinance.

#### Landmark and Heritage Tree Protection

Objective: Heritage and landmark tree resources preserved and protected for their historic, economic, and environmental functions.

Policies:

- CO-138. Protect and preserve non-oak native trees along riparian areas if used by Swainson's Hawk (SWHA), as well as landmark and native oak trees measuring a minimum of 6 inches in diameter or 10 inches aggregate for multi-trunk trees at 4.5 feet above ground.
- CO-139. Native trees other than oaks, which cannot be protected through development, shall be replaced with in-kind species in accordance with established tree planting specifications, the combined diameter of which shall equal the combined diameter of the trees removed.
- CO-140. For projects involving native oak woodlands, oak savannah, or mixed riparian areas, ensure mitigation through either of the following methods: (1) An adopted habitat conservation plan; (2) Ensure no net loss of canopy area through a combination of the following: A- preserving the main, central portions of consolidated and isolated groves constituting the existing canopy and B- provide an area on site to mitigate any canopy lost. Native oak mitigation area must be a contiguous area on site which is equal to the size of canopy area lost and shall be adjacent to existing oak canopy to ensure opportunities for regeneration; (3) Removal of native oaks shall be compensated with native oak species with a minimum of a one to one DBH replacement; (4) A provision for a comparable on-site area for the propagation of oak trees may substitute for replacement tree planting



requirements at the discretion of the Sacramento County Tree Coordinator when removal of a mature oak tree is necessary; (5) If the project site is not capable of supporting all the required replacement trees, a sum equivalent to the replacement cost of the number of trees that cannot be accommodated may be paid to Sacramento County's Tree Preservation Fund or another appropriate tree preservation fund; and (6) If on-site mitigation is not possible given site limitation, off-site mitigation may be considered. Such a mitigation area must meet all the following criteria to preserve, enhance, and maintain a natural woodland habitat in perpetuity, preferably by transfer of title to an appropriate public entity. Protected woodland habitat could be used as a suitable site for replacement tree plantings required by ordinances or other mitigations. (a) Equal or greater in area to the total area that is included within a radius of 30 feet of the dripline of all trees to be removed; (b) Adjacent to protected stream corridor or other preserved natural areas; (c) Supports a significant number of native broadleaf trees; and (d) Offers good potential for continued regeneration of an integrated woodland community.

- CO-141. In 15 years, the native oak canopy within on-site mitigation areas shall be 50% canopy coverage for valley oak and 30% canopy coverage for blue oak and other native oaks.

### 2.3.2 Sacramento County Tree Preservation Ordinance

Sacramento County regulates tree impacts and preservation through the Tree Preservation Ordinance (Sacramento County Code 480 Section 1, 1981). The Sacramento County Tree Preservation Ordination specifically applies to the following: (1) the planting, maintenance, protection, and preservation of public trees and landscaping; (2) helping to eliminate dangerous conditions caused by trees and shrubs that may result in injuries to persons or property; (3) the protection of all trees within Sacramento County against the spread of disease or pests; and (4) the provision for the special protection of heritage and landmark trees within the unincorporated area of Sacramento County. Chapter 19.12 of the Sacramento County Code requires a Sacramento County Tree Permit before any party shall plant, transplant, move, separate, trim, prune, cut above or below the ground, disrupt, alter, or do surgery upon any public tree located on an easement, planting easement, street, or public premises, irrespective of whether the tree is alive or dead. In addition, without a tree permit or discretionary approval by the Board of Supervisors, Sacramento County Planning Commission, Zoning Board of Appeals, the Zoning Administrator, or the Subdivision Review Committee, no person shall trench, grade, or fill within the dripline of any tree or destroy, kill, or remove any tree as defined, in the designated urban area of the unincorporated area of Sacramento County, on any property, public or private (Sacramento County 2021). Protected trees under this ordinance include the following: valley oak (*Quercus lobata*), interior live oak (*Quercus wislizenii*), blue oak (*Quercus douglasii*), or oracle oak (*Quercus morehus*). Additionally, per Sacramento County, a "tree" shall mean any living native oak tree having at least one trunk of 6 inches or more in diameter measured at 4.5 feet above the ground, or a multi-trunked native oak tree having an aggregate diameter of 10 inches or more, measured 4.5 feet above the ground (Sacramento County 2021).

### 2.3.3 South Sacramento Habitat Conservation Plan

The *South Sacramento Habitat Conservation Plan* (SSHCP) streamlines federal and state permitting processes for SSHCP-covered development and infrastructure projects, while protecting habitat, open space, and agricultural lands (SSHCP 2021). The SSHCP is led by a multi-jurisdiction collaborative that includes Sacramento County, the Cities of Rancho Cordova and Galt, the Sacramento County Water Agency, the Sacramento Regional County

Sanitation District, and the Capital Southeast Connector Joint Powers Authority (SSHCP 2021). The SSHCP does not expressly include utility-scale solar as a potential covered activity.

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# 3 Methods

## 3.1 Database and Literature Evaluation

Dudek completed a database and literature evaluation of special-status biological and aquatic resources present or potentially present within the PSA. The database and literature evaluation assessed the PSA vicinity, which specifically includes the general and nearby areas adjacent to the PSA, not to exceed 5 miles. Resources and search parameters used during the desktop-level review include the following:

- California Aquatic Resource Inventory dataset via ArcGIS for surface waters and their riparian areas in the PSA (CARI 2016).
- CDFW CNDDDB nine USGS 7.5-minute quad search (Carmichael, Buffalo Creek, Folsom SE, Elk Grove, Sloughhouse, Carbondale, Galt, Clay, and Goose Creek) and within a 5-mile buffer search for special-status species (CDFW 2021a).
- CNPS Online Inventory of Rare and Endangered Plants nine USGS 7.5-minute quad search (Carmichael, Buffalo Creek, Folsom SE, Elk Grove, Sloughhouse, Carbondale, Galt, Clay, and Goose Creek) (CNPS 2022)
- California Tree and Landscape Consulting Updated Arborist Report and Tree Inventory for Sloughhouse Solar LLC (SLLC 2020).
- Federal Emergency Management Agency National Flood Hazard Layer geospatial database (FEMA 2021).
- National Oceanic and Atmospheric Administration Essential Fish Habitat (EFH) West Coast Data Inventory via ArcGIS (NOAA 2022).
- Natural Resources Conservation Service Web Soil Survey (USDA 2022).
- SSHCP (Sacramento County 2018).
- USFWS Environmental Conservation Online System Threatened and Endangered Species Active Critical Habitat Report data via ArcGIS (USFWS 2020a).
- USFWS Information for Planning and Consultation Trust Resource Report for the PSA (USFWS 2022).
- USFWS National Wetlands Inventory Mapper of historical wetland data (USFWS 2020b).
- USGS National Hydrography Dataset to assess potential surface water features occurring in the PSA vicinity (USGS 2021).

In Addition, Dudek reviewed secondary resources such as the Calflora database and the Jepson Herbarium online for vegetation and specialty soil resources occurring in Sacramento County, the CNPS Manual of California Vegetation Online for vegetation community descriptions and classification attributes (CNPS 2021b), current and historical Google Earth aerial photography to identify any potential jurisdictional aquatic resources based on aerial signatures, and climate information for the region using the Western Regional Climate Center (Calflora 2021; Google Earth 2021; Jepson eFlora 2021; WRCC 2020).



## 3.2 Field Study

Dudek completed various reconnaissance, focused, and protocol-level technical field studies for aquatic resources and special-status plant and wildlife species that have the potential to occur in the PSA; see Section 4.5, Special-Status Species, for a full discussion on occurrence potentials. The methodology for the field studies conducted are detailed in the sections below.

### 3.2.1 Aquatic Resources Delineation

Dudek conducted an ARD within the PSA on October 27, 29, and 30, 2020; November 4 and 9 through 13, 2020; and March 3, 2021. The purpose of an ARD is to identify aquatic resources that may be potentially subject to agency jurisdiction pursuant to regulations in Section 401 and 404 of the CWA, Porter-Cologne Act, CFGC, and CEQA Guidelines. Aquatic resources within the PSA were delineated based on methodology described in USACE's *Wetlands Delineation Manual* (USACE 1987) and the *Regional Supplement for the Arid West Region* (USACE 2008a). Non-wetland waters of the U.S. and/or state were delineated based on the presence of an OHWM, as determined using the methodology in the *OHWM Field Guide for the Arid West Region* (USACE 2008b). Aquatic resources were recorded and mapped in the field using a Trimble R1 GNSS Receiver with sub-meter accuracy and ArcGIS Collector app for iOS. On June 9, 2021, the final ARD Report with a formal request for an Approved Jurisdictional Delineation was submitted to USACE, Sacramento District, to definitively determine and approve the extent of waters of the U.S. The ARD results are summarized in Section 4.2.1 of this final BTR and can be reviewed further in the final ARD Report (SSLLC 2022).

### 3.2.2 Special-Status Plant Species

#### 3.2.2.1 Protocol-Level Botanical Surveys

Dudek conducted reference population checks for special-status plant species on April 22, 2021 and conducted protocol-level botanical field surveys within the PSA on May 4, 2021. The purpose of protocol-level botanical surveys is to identify special-status plant resources that may be potentially subject to agency jurisdiction pursuant to regulations under FESA, CESA, CFGC, CEQA Guidelines, and the Sacramento County General Plan. The botanical field surveys were performed in accordance with the *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants* (USFWS 2000), the *Protocol for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018), and the *Botanical Survey Guidelines* (CNPS 2001). The protocol-level botanical field surveys were conducted during the appropriate floristic bloom period for special-status plant species known to occur within the Project region (i.e., late spring to early summer months). Surveys were completed using a systematic transect approach within suitable habitats for special-status species that have the potential to occur. All plant species encountered were identified to the taxonomic level appropriate to determine species and regulatory status, if needed. Botanical resources were recorded and mapped in the field using a Trimble R1 GNSS Receiver with sub-meter accuracy and ArcGIS Collector app for iOS. Complete special-status plant species profiles and botanical survey results have been included in Section 4.5 of this final BTR.

### 3.2.3 Special-Status Wildlife Species

#### 3.2.3.1 Valley Elderberry Longhorn Beetle Focused Surveys

Dudek conducted focused surveys for valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*; VELB) within the PSA on February 19 and 25, 2021, and January 12, 2022. The purpose of focused VELB surveys is to identify habitat and species presence that may be potentially subject to agency jurisdiction pursuant to regulations under FESA, CESA, CFGC, and CEQA Guidelines. The focused VELB surveys were performed using the *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (Desmocerus californicus dimorphus)* (USFWS 2017b), and the *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (USFWS 1999). The surveys focused on the assessment of black elderberry shrubs (*Sambucus nigra*), the host plant to VELB, to evaluate for ancillary evidence of VELB presence including eggs and/or larval galleries, bore holes, and frass. Only elderberry shrubs stem greater than 1 inch DBH were evaluated. Elderberry shrub health, total number of stems, and proximity to riparian habitat were also recorded during the focused surveys for VELB. Elderberry shrub locations were recorded and mapped in the field using ArcGIS Collector app for iOS. A complete VELB species profile and survey results have been included in Section 4.5.3.14 of this final BTR.

#### 3.2.3.2 California Tiger Salamander Preliminary Habitat Assessment and Aquatic Larval Surveys

Prior to conducting the California tiger salamander (*Ambystoma californiense*; CTS) aquatic larval surveys, a CTS preliminary habitat assessment was conducted to evaluate for the potential of CTS to occur within 2 kilometers of the solar development area within the PSA. This assessment was completed by compiling geographic information system aquatic resource data within 2 kilometers of the solar development area. Aquatic resources north of the Consumes River were not assessed, as CTS are not known to occur across the river boundary. Identified aquatic resource were further evaluated by assessing historic aerial imagery, hydrology sources, and other land use conditions to determine the likelihood for CTS to occur within the aquatic resources within 2 kilometers of the solar development area.

Dudek conducted CTS aquatic larval surveys within potential suitable habitat within the PSA in accordance with the *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or Negative Findings of California Tiger Salamander* (USFWS 2003). Aquatic larval surveys were conducted by a Dudek biologist holding a valid USFWS 10(a)(1)(A) Recovery Permit for the species. The CTS surveys included three separate site visits spaced a minimum of 10 days apart, on March 16, April 15, and April 28, 2021. The purpose of CTS aquatic larval surveys is to assess suitable upland and aquatic breeding habitat and determine species presence. Suitable sites were sampled using dipnets covering representative portions of the ponds with a maximum of 50 dipnet sweeps. Resources were recorded and mapped in the field using ArcGIS Collector app for iOS. A complete CTS species profile and survey results have been included in Section 4.5.3.1 of this final BTR.

#### 3.2.3.3 Western Spadefoot Toad Focused Surveys

Dudek conducted focused surveys for western spadefoot toad (*Spea hammondi*; WST) within potential suitable habitat for this species. The purpose of focused WST surveys is to assess suitable habitat and aquatic breeding habitat and determine species presence. The WST focused surveys were completed in conjunction with both the

CTS aquatic larval surveys (see Section 3.2.3.2) and the protocol-level large listed branchiopod wet season surveys (see Sections 3.2.3.4 and 3.2.3.5). Since there are no published protocols specific to WST surveys, WST surveys were performed in accordance with the most recent published literature and recommendations from CDFW and under the guidance of Dudek species experts. WST resources were recorded and mapped in the field using ArcGIS Collector app for iOS. A complete WST species profile and survey results have been included in Section 4.5.3.2 of this final BTR.

### 3.2.3.4 Protocol-Level Large Listed Branchiopod Dry Season Surveys

Dudek conducted protocol-level dry season surveys for large-listed branchiopods (i.e., vernal pool fairy shrimp [*Branchinecta lynchi*] and vernal pool tadpole shrimp [*Lepidurus packardii*]) within the PSA. The purpose of protocol-level large listed branchiopod dry season surveys is to identify if listed branchiopods are present within aquatic habitat soils that may potentially be subject to agency jurisdiction pursuant to regulations under FESA, CESA, CFGC, and CEQA Guidelines. Surveys were conducted on October 13 through 16, October 19 through 22, and November 11, 2020, by Dudek biologists holding valid USFWS 10(a)(1)(A) Recovery Permits for the listed species. Surveys were conducted in accordance with the *Survey Guidelines for Large Listed Branchiopods* (USFWS 2015) and were approved by USFWS prior to surveying.

For the dry season surveys, soil samples were collected from the bottom of each known aquatic resource when the soil was very dry, and a small 6-inch hand trowel was used to excavate between 10 and 100 samples of soil (approximately 100 milliliters each), depending on the size of the aquatic resource. The locations of the aquatic resources and sampling transects were recorded and mapped in the field using ArcGIS Collector app for iOS. Samples were collected equidistantly along two generally perpendicular transects. Soil samples were submitted in November 2020 for processing by Helm Biological Consulting to assess for cysts in the soil samples. On February 11, 2021, the final 90-Day Dry Season Protocol Survey Letter Report for Federally Listed Branchiopods was submitted to the Sacramento Office of the USFWS. On March 4, 2021, the USFWS provided a formal receipt of all report submittals. Complete species profiles for large-listed branchiopods and survey results have been included in Section 4.5.3.15-4.5.3.16 of this final BTR.

### 3.2.3.5 Protocol-Level Large Listed Branchiopod Wet Season Surveys

Dudek conducted protocol-level wet season surveys for large-listed branchiopods (i.e., vernal pool fairy shrimp and vernal pool tadpole shrimp) within the PSA. The purpose of protocol-level large listed branchiopod wet season surveys is to identify if live listed branchiopods are present within inundated aquatic resources that may be subject to jurisdiction pursuant to regulations under FESA, CESA, CFGC, and CEQA Guidelines. Surveys were conducted on February 3–5, February 17–18, March 3–4, March 17–18, March 31, April 14–15, and April 28, 2021, by a Dudek biologist holding a valid USFWS 10(a)(1)(A) Recovery Permit for the species. Surveys were conducted in accordance with the *Survey Guidelines for Large Listed Branchiopods* (USFWS 2015) and were approved by USFWS prior to surveying.

For the wet season surveys, site visits began after initial storm events when potential listed large branchiopod habitat had become inundated. All potential habitat was sampled at 14-day intervals after the initial inundation of habitat. Sampling continued within each potential habitat until it dried. At each wet season visit, representative portions of the bottom, edges, and vertical water column of the features were adequately sampled using a dip net or aquarium net. The contents of the nets were examined and emptied frequently. Information on pool conditions

and species was recorded and mapped in the field using ArcGIS Collector app for iOS. The final 90-Day Wet Season Protocol Survey Letter Report for Federally Listed Branchiopods was submitted to the USFWS in July 2021. Complete species profiles for large-listed branchiopods and survey results have been included in Section 4.5.3.15-4.5.3.16 of this final BTR.

### 3.2.3.6 Protocol-Level Burrowing Owl Breeding Season Surveys

Dudek conducted protocol-level burrowing owl (*Athene cunicularia*; BUOW) breeding season surveys within the PSA. The purpose of protocol-level BUOW surveys is to assess for burrows, suitability of habitat, and foraging or other activity within the PSA and up to 500 feet from the solar development area that may be potentially subject to agency jurisdiction pursuant to regulations in MBTA, CFGC, and CEQA Guidelines. Surveys were focused on the BUOW breeding season and conducted on February 18 and 25, 2021 (Pass 1); March 4 and 16, 2021 (Pass 2); April 9 and 15, 2021 (Pass 3); and May 3, 2021 (Pass 4). Due to the early dry season in the 2021 rain year, Pass 4 was conducted earlier than is typical to account for early nesting and fledging. In addition, in accordance with recommendations from CDFW, two additional breeding season surveys were conducted in 2022: June 2 and 3, 2022 (Pass 5), and July 7 and 9, 2022 (Pass 6). Surveys were completed in the PSA in accordance with the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012), and the *Burrowing Owl Survey Protocol and Mitigation Guidelines* (California Burrowing Owl Consortium 1993). Survey areas were focused on suitable habitat within the PSA, such as California annual grasslands, managed agricultural fields, roadside areas, and the margins of agricultural fields. Survey transect centerlines were marked at 30 feet and walked linearly. During the second, third, and fourth passes only those areas that were determined to support suitably sized burrows during the first survey pass were resurveyed. Surveys were conducted between civil twilight and 10:00 a.m. and 2 hours before sunset until civil twilight and were limited to periods when wind speed was less than 12 miles per hour and there was no precipitation or dense fog. Resources were recorded and mapped in the field using an ArcGIS Collector app for iOS. A complete BUOW species profile and survey results have been included in Section 4.5.3.8 of this final BTR.

### 3.2.3.7 Protocol-Level Swainson's Hawk Surveys

Dudek conducted protocol-level Swainson's hawk (*Buteo swainsoni*; SWHA) surveys within the PSA including visual and aural detection and visual surveys within 0.5 miles of the solar development area. The purpose of protocol-level surveys is to assess for SWHA nesting, foraging, suitability of habitat, and other activity within the PSA and vicinity that may be subject to agency jurisdiction pursuant to regulations under MBTA, CESA, CFGC, and CEQA Guidelines. Surveys were focused on the SWHA breeding season and conducted on February 18 and 25, 2021 (Pass 1); March 4 and March 16, 2021 (Pass 2); April 9 and 15, 2021 (Pass 3), May 3, 2021 (Pass 4); and June 4, 2021 (Pass 5). Due to the early dry season in the 2021 rain year, Passes 4 and 5 were conducted earlier than is typical to account for early nesting and fledging. In addition, in accordance with recommendations from CDFW, two additional SWHA breeding season surveys were conducted in 2022: June 2 and 3, 2022 (Pass 6), and July 7 and 9, 2022 (Pass 7). The protocol-level SWHA surveys were conducted in accordance with the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (SHTAC 2000). Initial surveys focused on inspection of individual and cluster trees and riparian areas for nests within the PSA. During subsequent surveys, nests and potential nest sites that were identified during the initial surveys were inspected for nesting activity, including territorial or courtship displays, brooding on the nest, presence of young on the nest, and frequent trips to the nest by adults. Survey transect centerlines were marked at 30 feet and walked linearly. Resources were recorded and mapped in the field using a Trimble R1 GNSS Receiver with sub-meter accuracy and ArcGIS Collector



app for iOS. A complete SWHA species profile and protocol survey results have been included in Section 4.5.3.11 of this final BTR.

### 3.2.3.8 Swainson's Hawk and Other Raptor Foraging and Land Use Study

In 2013, Estep Environmental Consulting conducted a 1-year study to assess raptor use of solar array fields at three newly developed photovoltaic solar facilities in Sacramento County (Estep Environmental Consulting 2013). The purpose of the study was to provide supplemental research that would inform impact assessment and mitigation requirements related to the loss of SWHA foraging habitat as provided under the *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (Buteo swainsoni) in the Central Valley* (CDFG 1994) by (1) determining the potential for solar facilities to maintain foraging habitat for SWHA and (2) evaluating and comparing the retained on-site foraging value to other known foraging habitats. The results of this study indicated that SWHAs and other raptors can use appropriately designed and managed solar array fields. Specifically, arrays should provide adequate spacing to allow foraging between arrays, and the grassland substrate should be managed to promote visibility and access to prey. The 2013 study found that foraging habitat within the solar arrays was being used by SWHAs at a greater frequency than would be expected based on habitat availability, suggesting that SWHAs were selecting the solar array habitat. Potential explanations for this included in the 2013 report included the ability of the hawks to perch on edges of solar arrays, and the management of grasslands in such a way to benefit prey detectability as compared to other local habitat types. However, CDFW determined that a 1-year study was insufficient to draw conclusions that would support the modification of standard mitigation requirement for solar projects.

The solar development area within the PSA is to be constructed on suitable SWHA foraging habitat. As such, Sloughhouse Solar, LLC engaged Estep Environmental Consulting to conduct an additional year (i.e., year two) of SWHA and other raptor foraging and land use studies. These studies were initiated on April 12, 2021 and concluded in September 2021. Both the 2013 and 2021 studies include the review of route and land cover to establish walking transects and survey points, and visual surveys of predetermined road routes in the vicinity of the Project. Surveys were conducted twice weekly during the breeding season for a total of 20 weeks, or 40 total surveys. Following surveys, all data was compiled and analyzed, including a Chi-square analysis to assess the relationship of available habitat, and observed use of habitat to determine the relative use of different land cover, including solar array fields. Results were compiled into *Swainson's Hawk and Other Raptor Foraging Use of Solar Array Fields within an Agricultural Landscape in Sacramento County, Year 2*, by Estep Environmental Consulting (Appendix A).

### 3.2.3.9 Tricolored Blackbird Focused Surveys

Dudek conducted tricolored blackbird (*Agelaius tricolor*; TRBL) focused surveys within the PSA. The purpose of focused TRBL surveys is to assess for colonial breeding sites/nesting, foraging, suitable habitat, and other activity within the PSA that may be potentially subject to agency jurisdiction pursuant to regulations in MBTA, CESA, CFGC, and CEQA Guidelines. Surveys for TRBL were conducted in accordance with *the Staff Guidance Regarding Avoidance of impacts to Tricolored Blackbird Breeding Colonies on Agricultural Fields* (CDFW 2015) and modified for the more natural and naturalized habitat present within the PSA. Surveys were focused on the TRBL breeding season and conducted in conjunction with the protocol-level BUOW and SWHA surveys in 2021. Survey transect centerlines were marked at 30 feet and walked linearly. Resources were recorded and mapped in the field using ArcGIS Collector app for iOS. A complete TRBL species profile and survey results have been included in Section 4.5.3.12 of this final BTR.

### 3.2.4 Reconnaissance-Level Biological Resource Surveys

Reconnaissance-level biological field surveys in the PSA were conducted in conjunction with all the species-specific technical studies listed in the sections above. Reconnaissance-level biological observations focused on assessing and identifying common plant species to the lowest taxonomic group possible, all wildlife observations, the presence of or potential for other special-status plant and wildlife species, and vegetation communities and land cover types. Field notes, an aerial photograph with an overlay of the property boundary, Collector for ArcGIS on an iPad/mobile device, a Trimble R1 GNSS Receiver with sub-meter accuracy, and ArcGIS Collector app for iOS were used interchangeably to map biological resources while in the field. Species survey results and inventory have been included in Sections 4.4.5 and 4.5 of this final BTR.

### 3.2.5 Arborist Tree Survey and Inventory

International Society of Arboriculture Certified Arborists with California Tree and Landscaping Consulting Inc. conducted a tree survey and inventory in February and December 2020, to evaluate the trees on the site for purposes of providing updated tree information for Project planning (Cal TLC 2020). The GPS location of each tree was collected using ArcGIS Collector app for iOS. The data detailed below were collected in the field. Survey and inventory results and inventory have been included in Section 4.5.2 of this final BTR.

- Field Tag Number - The pre-stamped tree number on the tag which is installed at approximately 6 feet above ground level on the north side of the tree.
- Species - The species of a tree is listed by local and correct common name and botanical name by genus and species.
- DBH - DBH is normally measured at 4 feet 6 inches, but if that varies then the location where it is measured is noted.
- Measured At - Height above average ground level where the measurement of DBH was taken.
- Canopy Radius and Protection Area - The farthest extent of the crown composed of leaves and small twigs. This measurement represents the longest extension from the trunk to the outer canopy, known as the “dripline.” This measurement further defines the protection zone and can indicate if pruning may be required for development. Sacramento County specifies this measurement as the required “Protected Root Zone.”
- Critical Root Zone - The radius of the critical root zone is a circle equal to the trunk diameter inches converted to feet and factored by tree age, condition, and health pursuant to the industry standard.
- Arborist Rating - This rating is subjective to condition and is based on both the health and structure of the tree. All the trees were rated for condition, per the recognized national standard as set up by the Council of Tree and Landscape Appraisers and the International Society of Arboriculture on a numeric scale of 5 (being the highest) to 0 (the worst condition, dead) as depicted in Table 1. The rating was done in the field at the time of the measuring and inspection.

**Table 1. Arborist and Sacramento County Tree Rating Scale**

| Rating Score     | Arborist Tree Rating | Sacramento County Tree Rating |
|------------------|----------------------|-------------------------------|
| 5 - Excellent    | No problems          | Excellent                     |
| 4 - Good         | No apparent problems | Good                          |
| 3 - Fair         | Minor problems       | Fair                          |
| 2 - Fair to Poor | Major problems       | Declining                     |
| 1 - Poor         | Extreme problems     | Severe decline                |
| 0 - Dead         | Dead                 | Dead                          |

Source: CalTLC 2020.

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## 4 Results

### 4.1 Environmental Setting

#### 4.1.1 Regional Setting and Land Use

The PSA is located within eastern Sacramento County at the eastern edge of the Central Valley, less than 15 miles from the western foothills of the Sierra Nevada Mountains (Figure 1). The PSA is less than 1 mile south of State Route 16, and approximately 18 miles southeast of the City of Sacramento. The PSA is surrounded by rural residential, commercial development, and open space generally composed of annual grassland and agricultural fields. The PSA is primarily used for cattle grazing or other agricultural operations. There is an existing solar facility located in the southeast corner of the PSA (Figure 2).

#### 4.1.2 Climate

The PSA is in a semi-arid climate where average annual temperatures range from approximately 53 °F to 91 °F, and the average annual precipitation is 20.06 inches. On average, the months with the highest rainfall are December and January, and July has the least precipitation (WRCC 2020). According to data from the Sacramento WB City weather station, the total precipitation recorded from October 1, 2019, through September 30, 2021, was 17.92 inches, approximately 61% of normal. Therefore, the PSA region had below normal hydrological conditions in the year preceding the biological resource surveys. The Sacramento WB City weather station is located approximately 18 miles west of the PSA at an elevation of approximately 25 feet amsl (CDEC 2020).

#### 4.1.3 Soil and Terrain

The PSA is in an area of relatively flat topographic relief with scattered rolling hills. Elevations within the PSA range from approximately 95 feet amsl in the western portion of the PSA to 160 feet amsl in the southeastern portion of the PSA.

According to the Natural Resources Conservation Service, there are 16 soil units mapped within the PSA. Each soil unit, hydric and drainage class (i.e., frequency and duration of wet periods in conditions like those in which it was developed), and typical landform or geomorphic position within the landscape is detailed in Table 2. Figure 3, Soil and Terrain Setting, provides the geographic extent of each soil unit in the PSA region (USDA 2022).

Of the 16 soil units identified within the PSA, six are listed as hydric soils. Hydric soils are defined by the National Technical Committee for Hydric Soils as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (USDA 2021). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation. Refer to Section 4.2.1 for description of wetlands and other waters recorded in the PSA. Soils encountered during the field surveys were generally classified as clay to clay loam soils.

**Table 2. Summary of Soil Units Within the Project Study Area**

| Soil Map Unit Name                                   | Landform                       | Drainage Class                                | Hydric <sup>1</sup> | Project Study Area Total Area (acres) |
|------------------------------------------------------|--------------------------------|-----------------------------------------------|---------------------|---------------------------------------|
| Bruella sandy loam, 0%–2% slopes                     | Terraces                       | Well-drained                                  | No                  | 2.44                                  |
| Bruella sandy loam, 2%–5% slopes                     | Terraces                       | Well-drained                                  | No                  | 58.80                                 |
| Columbia sandy loam, 0%–2% slopes                    | Flood plains                   | Somewhat poorly drained, occasionally flooded | Yes                 | 17.93                                 |
| Galt clay, 0%–1% slopes                              | Basin floors on fan remnants   | Somewhat poorly drained                       | Yes                 | 33.0                                  |
| Galt clay, 2%–5% slopes                              | Basin floors on fan remnants   | Moderately well drained                       | Yes                 | 126.62                                |
| Hadselville-Pentz complex, 2%–30% slopes             | Hills                          | Moderately well drained to well drained       | No                  | 226.32                                |
| Peters clay, 1%–8% slopes                            | Hills                          | Well drained                                  | No                  | 56.94                                 |
| Redding gravelly loam, 0%–8% slopes                  | Fan remnants                   | Moderately well drained                       | No                  | 14.93                                 |
| Reiff fine sandy loam, 0%–2% slopes                  | Flood plains                   | Well drained, occasionally flooded            | No                  | 96.11                                 |
| Sailboat silt loam, drained, 0%–2% slopes            | Flood plains on natural levees | Somewhat poorly drained, occasionally flooded | Yes                 | 3.50                                  |
| San Joaquin silt loam, 0%–3% slopes                  | Terraces                       | Moderately well drained                       | No                  | 14.02                                 |
| San Joaquin silt loam, 0%–8% slopes                  | Terraces                       | Moderately well drained                       | No                  | 52.45                                 |
| San Joaquin-Durixeralfs complex, 0%–1% slopes        | Terraces                       | Moderately well drained to well drained       | No                  | 0.25                                  |
| San Joaquin-Galt complex, leveled, 0%–1% slopes      | Terraces                       | Moderately well drained                       | Yes                 | 0.52                                  |
| San Joaquin-Galt complex, 0%–3% slopes               | Terraces                       | Moderately well drained                       | Yes                 | 18.59                                 |
| San Joaquin-Xerarents complex, leveled, 0%–1% slopes | Terraces                       | Moderately well drained to well drained       | No                  | 3.52                                  |

Source: USDA 2022.

<sup>1</sup> Hydric soil- defined by the USADA (i.e., formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part); if hydric conditions are present within the soil unit.

## 4.2 Hydrology

The PSA occurs within the Upper Cosumnes River watershed, which drains approximately 180 square miles of land in El Dorado, Amador, and Sacramento Counties (Hydrological Unit Code 1804001306) (USGS 2021). A complex of

seasonally inundated aquatic features generally drains the PSA in a southwesterly direction, and the Cosumnes River flows within the western boundary of the PSA (Figure 4, Hydrologic Setting). The western half of the PSA is located within the Federal Emergency Management Agency National Flood Hazard Layer 1% 100-year floodplain of the Cosumnes River (FEMA 2021), which flows immediately west of the PSA. However, the portion of the Cosumnes River within the PSA is bounded by levees intended to contain the river and protect against overtopping during varied annual precipitation events. The National Wetlands Inventory maps numerous aquatic resources in the PSA, including Freshwater Emergent Wetland, Freshwater Forested/Shrub Wetland, Freshwater Pond, and Riverine (USFWS 2020b). The National Wetlands Inventory dataset is based on coarse aerial mapping (Figure 4). Results are provided in Section 4.2.1.

## 4.2.1 Aquatic Resources Delineation

Dudek conducted an ARD within the PSA on October 27, 29, and 30, 2020; November 4 and 9 through 13, 2020; and March 3, 2021. Survey information and conditions is summarized below in Table 3.

**Table 3. Aquatic Resources Delineation Survey Information Summary**

| Survey Date | Hours                | Dudek Personnel                           | Conditions                                 |
|-------------|----------------------|-------------------------------------------|--------------------------------------------|
| 10/27/2020  | 8:00 a.m.– 4:00 p.m. | Laura Burris, Allie Sennett, Anna Godinho | 43°F–73°F; 0% cloud cover; 0–5 mph wind    |
| 10/28/2020  | 7:45 a.m.– 4:45 p.m. | Laura Burris, Allie Sennett, Anna Godinho | 40°F–85°F; 0% cloud cover; 0–3 mph wind    |
| 10/30/2020  | 7:30 a.m.–2:30 p.m.  | Laura Burris, Anna Godinho                | 41°F–77°F; 0% cloud cover; 0–3 mph wind    |
| 11/04/2020  | 8:30 a.m.–3:30 p.m.  | Anna Godinho, Paul Keating                | 64°F–78°F; 0% cloud cover; 0–3 mph wind    |
| 11/09/2020  | 8:00 a.m.– 4:00 p.m. | Allie Sennett, Adam Crawford              | 33°F–50°F; 0% cloud cover; 0–3 mph wind    |
| 11/10/2020  | 8:00 a.m.–4:00 p.m.  | Anna Godinho, Adam Crawford               | 48°F–55°F; 0% cloud cover; 0 mph wind      |
| 11/11/2020  | 7:30 a.m.–4:45 p.m.  | Laura Burris, Allie Sennett               | 36°F–70°F; 0–20% cloud cover; 0–5 mph wind |
| 11/12/2020  | 7:30 a.m.–4:00 p.m.  | Allie Sennett, Anna Godinho               | 33°F–74°F; 0% cloud cover; 0–3 mph wind    |
| 11/13/2020  | 7:30 a.m.–1:30 p.m.  | Laura Burris, Anna Godinho                | 41°F–57°F; 100% cloud cover; 0–3 mph wind  |
| 3/3/2021    | 2:00 p.m.–3:30 p.m.  | Anna Godinho                              | 60°F; 30% cloud cover; 0-3 mph wind        |

Source: SSSLIC 2022.

Ten aquatic resource types were documented in the solar development area and the adjacent other lands comprising the PSA, including freshwater emergent wetland, seasonal wetland, stock pond, vernal pool, ditch, ephemeral drainage, intermittent drainage, river, seasonal wetland swale, and upland swale (Figure 5, Aquatic Resources Delineation) (SSLLC 2022). Aquatic resources delineated within the PSA are summarized in Table 4.

**Table 4. Summary of Aquatic Resources within the Project Study Area**

| Aquatic Resource Feature      | Aquatic Resource Type | Total Acreage |
|-------------------------------|-----------------------|---------------|
| <b>Solar Development Area</b> |                       |               |
| Ditch                         | NWW                   | 0.15          |
| Ephemeral Drainage            | NWW                   | 0.74          |
| Intermittent Drainage         | NWW                   | 0.46          |
| Seasonal Wetland Swale        | NWW                   | 0.70          |
| Upland Swale                  | NWW                   | 0.08          |
| Pond                          | Wetlands              | 0.37          |
| Seasonal Wetland              | Wetlands              | 3.10          |
| Vernal Pool                   | Wetlands              | 0.25          |
|                               | <i>Sub-Total</i>      | 5.85          |
| <b>Adjacent Other Lands</b>   |                       |               |
| Ditch                         | NWW                   | 1.78          |
| Ephemeral Drainage            | NWW                   | 0.37          |
| Intermittent Drainage         | NWW                   | 1.91          |
| Perennial Drainage            | NWW                   | 24.10         |
| Seasonal Wetland Swale        | NWW                   | 1.45          |
| Upland Swale                  | NWW                   | 0.54          |
| Freshwater Emergent Wetland   | Wetlands              | 0.02          |
| Pond                          | Wetlands              | 16.64         |
| Seasonal Wetland              | Wetlands              | 11.06         |
| Vernal Pool                   | Wetlands              | 6.04          |
|                               | <i>Sub-Total</i>      | 63.90         |
|                               | <b>Total</b>          | <b>69.75</b>  |

**Source:** SLLC 2022.

**Note:** Applicable regulatory jurisdictions to aquatic resources as defined in this table are further provided in Table 16. Summary of the Preliminary Jurisdictions of Aquatic Resources within the Solar Development Area.

#### 4.2.1.1 Wetlands

##### Freshwater Emergent Wetland

One freshwater emergent wetland comprising approximately 0.02 acres occurs in the southwest corner of the PSA. This feature entirely occurs within the adjacent other lands within the PSA. This feature has developed because of artificial irrigation and would likely convert to upland vegetation if the leakage were repaired (SLLC 2022).

##### Pond

There are three ponds comprising approximately 17.01 acres within the PSA, of which 0.37 acres occur in the solar development area and 16.64 acres occur in the adjacent other lands. These features are natural closed depressions that have been artificially augmented by perennial water sources, for the purpose of supporting livestock (SLLC 2022).



## Seasonal Wetland

There are 51 seasonal wetlands comprising approximately 14.16 acres throughout the PSA, of which 3.10 acres occur in the solar development area and 11.06 acres occur in the adjacent other lands. These features only appear to be inundated seasonally, and some are connected via seasonal wetland swales, ephemeral drainages, and/or intermittent drainages. Seasonal wetlands were characterized by a distinct change in vegetation type and cover from the surrounding grassland. Small mammal burrows were observed within several of the features, indicating that these features remained dry for a long enough period for subterranean animals to inhabit them (SLLC 2022).

## Vernal Pool

There are 17 vernal pools comprising approximately 6.30 acres throughout the PSA, of which 0.25 acres occur in the solar development area and 6.04 acres occur in the adjacent other lands. These features were characterized as three-parameter wetlands with an impermeable layer such as a hard pan that may fill and empty several times during the rainy season. These features may be isolated or connected to larger vernal complexes via swales or subsurface flows. The vernal pools on site exhibited concentric rings of distinctly different vegetation cover and species composition (SLLC 2022).

### 4.2.1.2 Non-Wetland Waters

#### Ditch

There are four ditches comprising approximately 1.93 acres (5,105.55 linear feet) throughout the PSA, of which 0.15 acre (720.26 linear feet) is within the solar development area, and 1.78 acres (4,385.29 linear feet) are within the adjacent other lands of the PSA. The earthen ditches are human-made features with intermittent hydrology intended for runoff from stormwater, agricultural uses, irrigation, or similar purposes. There is no continuous riparian corridor associated with the ditch features in the PSA (SLLC 2022).

#### Ephemeral Drainage

There are four ephemeral drainages comprising approximately 1.11 acres (3,431.84 linear feet) within the PSA, of which 0.74 acres (2,439.08 linear feet) occur in the solar development area and 0.37 acres (992.76 linear feet) occur in the adjacent other lands. Ephemeral drainages on site consist of stream channels that are naturally occurring rather than human created and contain flowing water during and briefly after precipitation events. Hydrology of the ephemeral drainages depends on inputs during rain events and runoff from the surrounding uplands. There are no continuous riparian corridors associated with these features in the PSA (SLLC 2022).

#### Intermittent Drainage

There is one intermittent drainage comprising approximately 2.36 acres (4,462.81 linear feet) within the PSA, of which 0.46 acres (1,303.60 linear feet) occur in the solar development area and 1.91 acres (3,159.21 linear feet) occur in the adjacent other lands. Intermittent drainages generally have flowing water during certain times of the year, when groundwater provides water for stream flow, and receive supplemental water from rainfall runoff. The intermittent drainage on site appears to receive water via a culvert from a basin complex located north of the PSA. The drainage receives water from two adjacent seasonal wetland swales, contains three seasonal wetlands within low points or widenings, and terminates into Pond 3 (SLLC 2022).

### Perennial Drainage (Cosumnes River)

The northwestern portion of the PSA contains 24.10 acres (4,506.29 linear feet) of the Cosumnes River and its associated riparian corridor. This feature entirely occurs within the adjacent other lands within the PSA. The Cosumnes River is a known jurisdictional water with perennial flows that originates in the Sierra Nevada mountains and flows approximately 50 miles into the Central Valley, emptying into the Mokelumne River in the Sacramento San Joaquin Delta (SLLC 2022).

### Seasonal Wetland Swale

There are 15 seasonal wetland swales comprising approximately 2.15 acres (8,807.17 linear feet) within the PSA, of which 0.70 acres (3,874.33 linear feet) occur in the solar development area, and 1.45 acres (4,932.85 linear feet) occur in the adjacent other lands. Seasonal wetland swales on site consist of topographic depressions that would be expected to convey water when inundated, but where a defined bed and bank and typical fluvial indicators are lacking (SLLC 2022).

### Upland Swale

There are seven upland swales comprising approximately 0.62 acres (1,837.54 linear feet) within the PSA, of which 0.08 acres (923.59 linear feet) occur in the solar development area and 816 linear feet 0.54 acres (811.44 linear feet) occur in the adjacent other lands. Upland swales on site consisted of linear topographic depressions that lack a distinct OHWM (SLLC 2022).

## 4.3 Vegetation Communities and Land Cover Types

Vegetation communities and land cover types within the PSA consist of a combination of terrestrial non-vegetative land covers and natural vegetation communities. The vegetation communities and land covers within the PSA were mapped using the SSHCP land cover data (Sacramento County 2018). SSHCP vegetation communities and land cover types occurring within the PSA include agricultural, California annual grassland, low density development, mixed riparian forest, urban, valley foothill riparian, and valley grassland. The SSHCP has also mapped aquatic resource land covers with the PSA including hydrologic streams and creeks, swales, seasonal wetlands, and vernal pools (Figure 6, Vegetation and Land Cover). The SSCHP aquatic resources within the PSA have been replaced with the more detailed mapping of aquatic resources as defined in Section 4.2.1. A complete summary of vegetation communities and land cover types is summarized in Table 5. Special-status species and/or SSCHP Covered Species with the potential to occur and/or that are known to occur in the PSA and associated suitable habitat (i.e., vegetation community or land cover type) are discussed below.

**Table 5. Summary of Vegetation Communities and Land Cover within the Project Study Area**

| Vegetation Community/Land Cover Type | Total Acreage |
|--------------------------------------|---------------|
| <b>Solar Development Area</b>        |               |
| California Annual Grassland          | 357.61        |
| Low Density Development              | 6.84          |
| Urban                                | 1.96          |
| <i>Sub-Total</i>                     | 366.41        |
| <b>Adjacent Other Lands</b>          |               |
| Agricultural                         | 85.33         |
| California Annual Grassland          | 180.48        |
| Low Density Development              | 14.93         |
| Mixed Riparian Woodland              | 10.42         |
| Urban                                | 2.32          |
| Valley Foothill Riparian             | 17.38         |
| Valley Grassland                     | 2.86          |
| <i>Sub-Total</i>                     | 313.71        |
| <b>Total</b>                         | <b>680.12</b> |

**Source:** Sacramento County 2018.

**Note:** The total acreage of vegetation communities land cover types omits overlapping aquatic resources occurring in the PSA.

## 4.3.1 Vegetation Communities

### 4.3.1.1 California Annual Grassland

California annual grassland is the dominant vegetation community present through all portions of the PSA. Dominant species in this community include soft brome (*Bromus hordeaceus*), medusa head (*Elymus caput-medusae*), and narrow tarweed (*Holocarpha virgata*). The shrub and tree layer are absent from this vegetation community. There are numerous aquatic features that occur throughout the California annual grassland (discussed in Section 4.2.1). California annual grassland supports wildlife species such as herbivores, deer, rabbits, gophers, and mice, and provides suitable nesting and foraging bird habitat. California annual grassland comprises a total of 357.61 acres in the solar development area and a total of 180.48 acres in the adjacent other lands of the PSA.

### 4.3.1.2 Mixed Riparian Woodland

Mixed riparian woodland is a vegetation community that is present along the Consumes River corridor, on the east side of the PSA, outside of the solar development area. Mixed riparian woodland intergrades with the valley grassland wooded borders along streams and agricultural fields (Sacramento County 2018). Vegetation associated with this vegetation community includes various oak species (*Quercus* spp.) and elderberry shrubs, as well as other herbaceous species that occur in the sparse to densely vegetated ground cover. There is no mixed riparian woodland within the solar development area. Mixed riparian woodland comprises a total of 10.42 acres with the adjacent other lands of the PSA.

### 4.3.1.3 Valley Foothill Riparian

Valley foothill riparian is a vegetation community that is also present along the Cosumnes River corridor. Valley foothill riparian is like the mixed riparian woodland vegetation community described in Section 4.3.1.2. There is no valley foothill riparian within the solar development area. Valley foothill riparian comprises a total of 17.38 acres with the adjacent other lands of the PSA.

### 4.3.1.4 Valley Grassland

Valley grassland is present within a ditch adjacent to the agricultural areas in the eastern vicinity of the PSA. Valley grassland is a vegetation community that is like the California annual grassland vegetation community described in Section 4.3.1.1. Additionally, valley grassland is one of the most dominant vegetation types in the PSA and in the PSA region (Sacramento County 2018). This vegetation community is characterized mostly by naturalized annual grasses and herbaceous annual forbs and includes patches with relatively high proportions of native grasses and forbs. There is no valley grassland within the solar development area. Valley grassland comprises a total of 2.86 acres with the adjacent other lands of the PSA.

## 4.3.2 Land Cover Types

### 4.3.2.1 Agricultural

Agricultural land cover comprises a large field to the east of the Cosumnes River riparian corridor and levee. Land cover classified as agricultural typically includes lands where farming and other agricultural practices take place, including pastures (hay and alfalfa), row crops and other unidentified croplands. Production practices observed in the PSA include flood-irrigation and cultivation followed by harvesting and discing. After discing, some fields remain fallow for short periods of time, allowing for the establishment of annual and biennial native and non-native annual grasses and broad-leaved plants, including many non-native species. In 2018, approximately 500 acres were burned in a fire and no irrigation was initiated. No agricultural land cover was identified in the solar development area of the PSA. Agricultural land cover comprises a total of 85.33 acres in the adjacent other lands of the PSA.

### 4.3.2.2 Low Density Development

The low-density development land cover type consists of relatively sparse constructed environments such as residences and other structures, including farm buildings, and small rural neighborhoods with large individual property sizes per house (Sacramento County 2018). These areas are primarily concentrated in the northeastern vicinity of the PSA, adjacent to agricultural lands. Low density development land cover comprises a total of 6.84 acres in the solar development area and a total of 14.93 acres in the adjacent other lands of the PSA.

### 4.3.2.3 Urban

The urban land cover type consists of developed areas, including roadways and other general infrastructure systems. Most urban areas, if planted, are planted with non-native grasses, shrubs, and trees. Species composition in urban habitats varies with planting design and climate. Monoculture is commonly observed in tree groves and street tree strips. Some urban land covers are regularly maintained by irrigation, mowing, pruning, or other



management techniques (Sacramento County 2018). Urban land cover in the PSA consists of county roads. Urban land cover comprises a total of 1.96 acres in the solar development area and a total of 2.32 acres in the adjacent other lands of the PSA.

## 4.4 Other Biological and Aquatic Resources

### 4.4.1 Sensitive Natural Communities

Sensitive natural communities are communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects. These communities may or may not contain special-status species. Specifically, sensitive natural communities are those that are listed in the CDFW CNDDDB due to the rarity of the community in the state or throughout its entire range (i.e., globally). For rarity, the ranking involves the knowledge of range and distribution of a given type of vegetation, and the proportion of occurrences that are of good ecological integrity. The conservation of sensitive natural communities is integral to maintaining biological diversity (CDFW 2021b).

#### 4.4.1.1 Northern Hardpan Vernal Pool

Northern hardpan vernal pool has been identified within 5 miles of the PSA, with the closest known occurrence located approximately 0.90 miles east of the PSA, specifically in the Meiss Road vicinity, 1 mile south of the Cosumnes River and east of Dillard Road (Figure 7, Known Special-Status Species Occurrences, Critical Habitat, and Sensitive Communities) (CDFW 2022). Northern hardpan vernal pools are not decidedly present within the PSA, however there is vernal pool habitat, a sensitive community, present within the PSA, as discussed in Section 4.2.1 above.

Northern hardpan vernal pools are seasonally flooded or saturated with fresh water. Many species of plants and wildlife depend on these unique communities and are often classified special-status, including CTS and WST, which have a potential to occur in the PSA and are further discussed in Section 4.5.3. Vegetative species composition varies from pool to pool and from year to year. Herbs and grasses typically grow less than 1 foot high with intermediate to open cover. These pools form over areas with hardpan soils and generally have more topographic relief associated with them. CDFW tracks this rare habitat (Tulare Basin Wildlife Partners 2021). The vernal pools in the PSA are considered a sensitive natural community.

### 4.4.2 Riparian Habitat

A stream or other watercourse is a body of water that flows year-round or intermittently, and as such has surface and subsurface flow that supports or has supported riparian vegetation/habitat. Riparian habitat acts as a buffer between aquatic resources and uplands. Healthy riparian habitat is essential in supporting both plant and wildlife species, as well as supporting watercourse integrity. As such, riparian habitat is considered a sensitive habitat within California pursuant to CFGC 1600-1616 and regulated through the CDFW Lake and Streambed Alteration Program. The goal of conserving riparian habitat as a sensitive natural community is to preserve these systems to maintain species and watercourse health and function. Within the PSA, riparian habitat was identified along the Consumes River in the adjacent other lands of the PSA and classified as mixed riparian woodland and valley foothill riparian vegetation communities; riparian habitat is discussed in Section 4.3.1. above.

### 4.4.3 Swainson's Hawk Foraging Habitat

SWHA nesting and foraging habitat is present within the PSA. Specifically, SWHA foraging habitat is identified as the California annual grassland and valley grassland vegetation communities in the PSA, as described in Section 4.3.1.

### 4.4.4 Designated Critical Habitat/Essential Fish Habitat

Critical habitat is designated by USFWS and is specifically defined as a geographic area that contains features essential to the conservation of species listed as threatened or endangered under FESA. The purpose of Designated Critical Habitat (DCH) is to identify areas that are essential to the species' conservation and recovery and what management requirements may be necessary to conserve the species. EFH is designated by the National Oceanic and Atmospheric Administration and is specific to aquatic habitat where federally managed fish species and invertebrates live and reproduce. Discussed below are the five types of DCH and EFH occurring within the PSA and/or within 5 miles of the PSA (Figure 7).

#### 4.4.4.1 Chinook Salmon Essential Fish Habitat

National Oceanic and Atmospheric Administration Fisheries has delineated eight recovery domains, or geographic recovery planning areas, for the FESA-listed salmon and steelhead species populations on the western coast of California, and this includes Chinook salmon (*Oncorhynchus tshawytscha*). The *2014 Recovery Plan for Sacramento River Winter-run Chinook, Central Valley Spring-run Chinook, and Central Valley Steelhead* domain extends from the upper Sacramento River Valley to the northern portion of the San Joaquin River Valley (NOAA 2014). This domain includes the Cosumnes River.

The Cosumnes River flows along the western boundary of the PSA, within the adjacent other lands of the PSA, where EFH for Chinook salmon has been identified (NOAA 2022).

#### 4.4.4.2 Sacramento Orcutt Grass and Slender Orcutt Grass Designated Critical Habitat

USFWS has designated habitat for special-status annual grass species Sacramento Orcutt grass (*Orcuttia viscidia*) and slender Orcutt grass (*Orcuttia tenuis*). Protection and recovery requisites for these species are detailed in the *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (USFWS 2005). The known range and habitat for these species includes swales, wetlands, and vernal pools within the Sacramento Valley. These species are distributed in a narrow zone of remnant depositional stream terraces at the base of the Sierra foothills in northern hardpan vernal pool and northern volcanic mudflow vernal pools. Most, if not all occurrences for these species are in eastern Sacramento County in the general vicinity of the PSA. Although several occurrences are now protected under land conversion easements, impacts from surrounding land use, adjacent road widening, and other human activities continue to threaten the species (USFWS 2009).

DCH for Sacramento Orcutt grass has been identified within 5 miles of the PSA, with the closest located approximately 3.70 miles southeast of the PSA (USFWS 2020c). DCH for slender Orcutt grass has also been identified within 5 miles of the PSA, with the closest located approximately 4.20 miles northwest of the PSA (USFWS

2020d). Sacramento Orcutt grass and slender Orcutt grass are discussed in detail in Section 4.5.1, Special-Status Plants.

#### 4.4.4.3 Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp Designated Critical Habitat

USFWS has designated habitat for special-status invertebrate species vernal pool fairy shrimp and vernal pool tadpole shrimp. Protection and recovery requisites for these species are detailed in the 2005 Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon (USFWS 2005). These species have an ephemeral life cycle and exist only in vernal pools or vernal pool-like habitats, such as those occurring within the PSA. The overarching recovery strategy for these species is habitat protection and management (USFWS 2005).

DCH for vernal pool fairy shrimp and vernal pool tadpole shrimp have both been identified within 5 miles of the PSA, with the closest located approximately 1.30 miles southeast of the PSA (USFWS 2020c). Vernal pool fairy shrimp and vernal pool tadpole shrimp are discussed in detail in Section 4.5.3.

#### 4.4.5 Wildlife Corridors and Habitat Linkages

Wildlife movement corridors have been recognized by federal and state agencies as important habitats worthy of conservation. Wildlife corridors provide migration channels seasonally (i.e., between winter and summer habitats) and provide non-migrant wildlife the opportunity to move within their home range for food, cover, reproduction, and refuge.

The existing network of fencing throughout the PSA is wildlife-friendly and does not preclude overland movement. Therefore, agricultural areas and undeveloped grassland in the PSA provide open space with some habitat value. However, proposed fencing around the solar development area of the Project may limit wildlife permeability for certain species. Species such as birds, small to medium sized mammals (i.e., coyote, racoon, etc.) and reptiles (i.e., snakes, lizards, etc.) will be able to pass through or over the proposed fencing and will not impede their movement through the solar development area.

According to the California Essential Habitat Connectivity Project, the Cosumnes River corridor in the western vicinity of the PSA is considered a potential riparian connection, providing native habitat for resident wildlife and linkages to additional native habitat in the surrounding area (Spencer et al. 2010). The California Essential Habitat Connectivity Project also identifies much of the grasslands within the PSA as “Natural Areas Small,” which are areas important to maintaining ecological integrity, but not specifically identified in the Essential Connectivity Network as Essential Connectivity Areas or Natural Landscape Blocks. As discussed in Section 4.3, the agricultural areas and grasslands on site provide nursery and migratory habitat for common wildlife species. Furthermore, the SSCHP recognized the Cosumnes River Corridor in the vicinity as part of SSHCP Preserve Planning Unit 5 (i.e., a linkage to targeted preserve areas within the region). A complete discussion of habitat and wildlife linkages is provided in Section 6.2 of the final BTR.

#### 4.4.6 Plant and Wildlife Species Observed

During field studies conducted in the PSA, a total of 75 species of native or naturalized plants, 34 native (45%) and 41 non-native (55%), were recorded on the PSA. A total of 40 wildlife species were observed in the PSA, 38 native

(95%) and two introduced species (5%). Wildlife species observed primarily consisted of common bird species, some of which are considered special status. A compendium of observed plant and wildlife species identified during the field surveys is included as Appendix B.

## 4.5 Special-Status Species

For this final BTR, special-status plant and wildlife species are defined as those that are (1) listed, proposed for listing, or candidates for listing as threatened or endangered under the FESA; (2) listed or candidates for listing as threatened or endangered under the CESA; (3) a federal Bird of Conservation Concern (BSS); (4) a CDFW Species Of Special Concern (SSC); (5) a plant species with a CRPR or 1 or 2; (6) a Covered Species under the SSHCP; and/or (7) a special-status species that may otherwise meet the definition of rare or endangered under CEQA Section 15380. Appendices C and D summarize the potential for the occurrence of special-status species identified during the literature and desktop review. Figure 7 provides known occurrence locations of special-status species based on database search results. This section further summarizes the results of special-status species with the potential to occur within the PSA based on the database and literature evaluation and species-specific technical survey results.

### 4.5.1 Special-Status Plants

Results of the database searches of the USFWS Information for Planning and Consultation, CDFW CNDDDB, the CNPS Inventory of Rare and Endangered Plants, and the SSHCP revealed a total of 19 special-status plant species that have known occurrences within the nine USGS 7.5-Minute Quads and/or within 5 miles of the PSA (CDFW 2022; CNPS 2022). Of these special-status plant species, 12 species have a low to moderate potential to occur in the PSA, and of these, nine are Covered Species under the SSHCP. Species with the potential to occur in the PSA are discussed in further detail below. The remaining seven special-status plant species were removed from further consideration due to lack of suitable habitat within or adjacent to the PSA, no known occurrences within 5 miles of the PSA, and/or because the PSA is outside of the species' known geographic or elevation range. The plant species with no potential to occur in the PSA can be referenced in Appendix C. Results of the protocol-level botanical survey are summarized in Section 4.5.1.11.

#### 4.5.1.1 Ahart's Dwarf Rush (*Juncus leiospermus* var. *ahartii*)

Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*) is a CRPR 1B.2 species (i.e., moderately threatened in California) and SSHCP Covered Species with a low potential to occur in the PSA. Ahart's dwarf rush is an annual herb that is native to California. The common blooming period for this species is March through May. This species can be found in mesic valley and foothill grassland habitat from approximately 98 to 750 feet amsl. This species has not been documented in the vicinity of the PSA, but the PSA is within the known range of the species. Habitat for the species is minimal and of low quality in the PSA, though the PSA does include SSHCP modeled habitat (Sacramento County 2018). Suitable habitat for this species in the PSA includes vernal pools, wetland swales and seasonal wetlands throughout both the solar development area and adjacent other lands. The nearest known occurrence for this species is within 5 miles of the PSA, located at the southeast corner of Keifer Boulevard and Sunrise Boulevard (CDFW 2022; Sacramento County 2018).

This species was not observed during protocol-level botanical surveys, as discussed below in Section 4.5.1.11.



#### 4.5.1.2 Boggs Lake Hedge-Hyssop (*Gratiola heterosepala*)

Boggs Lake hedge-hyssop (*Gratiola heterosepala*) is a state endangered, CRPR 1B.2 species (i.e., moderately threatened in California) and SSHCP Covered Species with a moderate potential to occur in the PSA. Boggs Lake hedge-hyssop is an annual herb that is native to California. The common blooming period for this species is April through August. This species can be found in clay soils in marshes, swamps, lake margins, and vernal pools from approximately 33 to 7,790 feet amsl. The PSA is within the known range of the species, and low-quality suitable habitat for the species is present throughout the PSA within the vernal pools, wetland swales, and seasonal wetlands of both the solar development area and adjacent other lands. The nearest known occurrence for this species is within 5 miles of the PSA, located approximately 0.85 miles southwest of the junction at Sloughhouse Road and Jackson Road (Highway 16) (CDFW 2022; Sacramento County 2018).

This species was not observed during protocol-level botanical surveys, as discussed below in Section 4.5.1.11.

#### 4.5.1.3 Dwarf Downingia (*Downingia pusilla*)

Dwarf downingia (*Downingia pusilla*) is a CRPR 2B.2 species (i.e., moderately threatened in California) and SSHCP Covered Species with a moderate potential to occur in the PSA. Dwarf downingia is an annual herb that is native to California. The common blooming period for this species is March through May. This species can be found in mesic valley and foothill grassland and vernal pool habitat from approximately 3 to 1,455 feet amsl. The PSA is within the known range of the species, and suitable habitat for this species is located throughout the PSA within the vernal pools, wetland swales, and seasonal wetlands of the solar development area and adjacent other lands. The nearest known occurrences for this species are located west of the PSA in the Elk Grove USGS 7.5-Minute Quad and south to southwest in the Clay and Galt USGS 7.5-Minute Quads (CNPS 2022; Sacramento County 2018).

This species was not observed during protocol-level botanical surveys, as discussed below in Section 4.5.1.11.

#### 4.5.1.4 Hoary Navarretia (*Navarretia eriocephala*)

Hoary navarretia (*Navarretia eriocephala*) is a CRPR 4.3 species (i.e., limited distribution in California yet not very threatened). Hoary navarretia is an annual herb that is native to California. The common blooming period for this species is May through June. This species can be found in cismontane woodlands, valley and foothill grasslands, and vernal mesic aquatic areas. The PSA is within the known range for this species and there is suitable habitat present throughout the PSA. The nearest known occurrences for this species are located west of the PSA in the Elk Grove USGS Quad (CNPS 2022).

This species was not observed during protocol-level botanical surveys, as discussed below in Section 4.5.1.11.

#### 4.5.1.5 Hogwallow Starfish (*Hesperervax caulescens*)

Hogwallow starfish (*Hesperervax caulescens*) is a CRPR 4.2 species (i.e., limited distribution in California and moderately threatened). Hogwallow starfish is an annual herb that is native to California. The common blooming period for this species March through June. This species can be found in valley and foothill grasslands, and vernal pool aquatic features. This PSA is within the known range for this species and there is minimal suitable habitat

present. The nearest known occurrences for this species are located west of the PSA in the Buffalo Creek USGS Quad (CNPS 2022).

#### 4.5.1.6 *Legenere (Legenere limosa)*

*Legenere (Legenere limosa)* is a CRPR 1B.1 species (i.e., seriously threatened in California) and SSHCP Covered Species with a moderate potential to occur in the PSA. *Legenere* is an annual herb that is native to California. The common blooming period for this species is April through June. This species can be found in vernal pools from approximately 2 to 2,885 feet amsl. The PSA is within the known range of the species, and habitat for the species is present. There is also SSHCP modeled habitat in the PSA (Sacramento County 2018). Suitable habitat for this species is located throughout the PSA within the vernal pools, wetlands swales, and seasonal wetlands of the solar development area and adjacent other lands. The nearest known occurrences for this species are within 5 miles of the PSA, located approximately 2 miles northeast of the Nimbus Fish Hatchery and 1.8 miles east of the junction of Apple Road and Dillard Road (CDFW 2022; Sacramento County 2018).

This species was not observed during protocol-level botanical surveys, as discussed below in Section 4.5.1.11.

#### 4.5.1.7 *Pincushion Navarretia (Navarretia myersii ssp. myersii)*

*Pincushion navarretia (Navarretia myersii ssp. myersii)* is a CRPR 1B.1 species (i.e., seriously threatened in California) and SSHCP Covered Species with a moderate potential to occur in the PSA. *Pincushion navarretia* is an annual herb that is native to California. The common blooming period for this species is April through May. This species can be found in often acidic vernal pools from approximately 66 to 1,080 feet amsl. The PSA is within the known range of the species, and habitat for the species is present. The PSA is also mapped as SSHCP modeled habitat for the species (Sacramento County 2018). Specifically, the Hadselville-Pentz and Redding Gravelly Loam soil complexes within the PSA are slightly acidic, and vernal pools located in these soils provide potential suitable habitat. The nearest known occurrence for this species is within 5 miles of the PSA, located approximately 6 miles east of Highway 16, south of the Schneider Ranch property near Meiss Road (CDFW 2022; Sacramento County 2018; USDA 2022).

This species was not observed during protocol-level botanical surveys, as discussed below in Section 4.5.1.11.

#### 4.5.1.8 *Sacramento Orcutt Grass (Orcuttia viscida)*

*Sacramento Orcutt (Orcuttia viscida)* grass is a federally and state endangered, CRPR 1B.1 species (i.e., seriously threatened in California) and SSHCP Covered Species with a moderate potential to occur in the PSA. *Sacramento Orcutt grass* is an annual herb that is native to California. The common blooming period for this species is April through July. This species can be found in vernal pools from approximately 98 to 330 feet amsl. The PSA is within the known range of the species, and habitat for the species is present. Suitable habitat for this species is located throughout the PSA within the vernal pools, wetland swales, and seasonal wetlands of both the solar development area and adjacent other lands. DCH is located approximately 4 miles northwest of the PSA and discussed further in Section 4.4. There are also several known occurrences for this species within 5 miles of the PSA, including numerous locations off Kiefer Boulevard near the intersection with Grant Line Road (CDFW 2022; USFWS 2020d).

This species was not observed during protocol-level botanical surveys, as discussed below in Section 4.5.1.11.

#### 4.5.1.9 Sanford's Arrowhead (*Sagittaria sanfordii*)

Sanford's arrowhead (*Sagittaria sanfordii*) is a CRPR 1B.2 species (i.e., moderately threatened in California) and SSHCP Covered Species with a low potential to occur in the PSA. Sanford's arrowhead is a perennial rhizomatous emergent herb that is native to California. The common blooming period for this species is April through October (or sometimes November). This species can be found in assorted, shallow freshwater marshes and swamps from approximately sea level to 2,130 feet amsl. The PSA is within the known range of the species and perennially inundated habitat for the species is present but is minimal and of low quality. The PSA also includes SSHCP modeled habitat for the species (Sacramento County 2018). The nearest known occurrence for this species is within 5 miles of the PSA, located approximately 0.60 miles south of Meiss Road and southeast of Sloughhouse (CDFW 2022; Sacramento County 2018).

This species was not observed during protocol-level botanical surveys, as discussed below in Section 4.5.1.11.

#### 4.5.1.10 Slender Orcutt Grass (*Orcuttia tenuis*)

Slender Orcutt grass (*Orcuttia tenuis*) is a federally threatened, state endangered, CRPR 1B.1 species (i.e., seriously threatened in California) and SSHCP Covered Species with a moderate potential to occur in the PSA. Slender Orcutt grass is an annual herb that is native to California. The common blooming period for this species is May through September. This species can be found in often gravelly vernal pools from approximately 115 to 5,770 feet amsl. The PSA is within the known range of the species, and suitable habitat for this species is located throughout the PSA within the vernal pools, wetland swales, and seasonal wetlands of both the solar development area and adjacent other lands. DCH is located approximately 4 miles northwest of the PSA. A known occurrence is also recorded for this species to the west of the PSA in the Elk Grove USGS 7.5-Minute Quad (CNPS 2022; USFWS 2020c).

This species was not observed during protocol-level botanical surveys, as discussed below in Section 4.5.1.11.

#### 4.5.1.11 Tuolumne Button-Celery (*Eryngium pinnatisectum*)

Tuolumne button-celery (*Eryngium pinnatisectum*) is a CRPR 1B.2 species (i.e., moderately threatened in California) with a low potential to occur in the PSA. Tuolumne button-celery is an annual or perennial herb that is native to California. The common blooming period for this species is May through August. This species can be found in mesic cismontane woodland, lower montane coniferous forest, and vernal pools from approximately 230 to 3,000 feet amsl. This species has not been documented in the vicinity of the PSA, but the PSA is within the known range of the species. Habitat for the species in the PSA is minimal and of low quality and is in the vernal pools, wetland swales, and seasonal wetlands of the solar development area and adjacent other lands. The nearest known occurrences for this species are located to the east and northeast of the PSA in the Carbondale and Folsom SE USGS 7.5-Minute Quads (CNPS 2022).

This species was not observed during protocol-level botanical surveys, as discussed below in Section 4.5.1.11.

#### 4.5.1.12 Valley Brodiaea (*Brodiaea rosea* ssp. *vallicola*)

Valley brodiaea (*Brodiaea rosea* ssp. *vallicola*) is a CRPR 4.2 species (i.e., limited distribution and is moderately threatened in California) with a moderate potential to occur in the PSA. Valley brodiaea is perennial herb (bulb) that is native to California. The common blooming period for this species is April through May. This species can be found in valley and foothill grasslands, alluvial terraces that are silty, sandy, and/or loamy, and in vernal pools and swale aquatic features. The PSA is within the known range for this species and contains suitable habitat. This species has been documented four miles northwest of the PSA (CDFW 2022).

This species was not observed during protocol-level botanical surveys, as discussed below in Section 4.5.1.11.

#### 4.5.1.11 Protocol-Level Botanical Survey Results

Dudek conducted protocol-level botanical surveys in April and May 2021 in accordance with *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants* (USFWS 2000), the *Protocol for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018), and the *Botanical Survey Guidelines* (CNPS 2001).

As part of the protocol-level botanical surveys, Dudek first conducted reference population checks at known locations for species that were found to have a potential to occur within the PSA during the database and literature evaluation (Figure 7). On April 22, 2021, Dudek conducted reference population checks for mid to early late bloom species. Reference population checks yielded positive identification of Tuolumne button-celery, which typically blooms May through August, and was in early phenological stage at the time of observation. All other reference population checks for known special-status plant species yielded no observations, as well as abnormally dry conditions in suitable habitat features (Table 6).

**Table 6. Botanical Reference Population Assessment Summary**

| Species                                                              | Location of Reference Population                                             | Occurrence ID   | Typical Bloom Period | Assessment Summary                                                                                                                                                                  |
|----------------------------------------------------------------------|------------------------------------------------------------------------------|-----------------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ahart's dwarf rush ( <i>Juncus leiospermus</i> var. <i>ahartii</i> ) | Illa Collin Preserve at Mather Field; off Zinfandel Drive, west side of road | 8 <sup>1</sup>  | March–May            | No special-status plant observed. Vernal pools very dry.                                                                                                                            |
| Boggs Lake hedge-hyssop ( <i>Gratiola heterosepala</i> )             | Illa Collin Preserve at Mather Field; off Zinfandel Drive, west side of road | 84 <sup>1</sup> | April–August         | No special-status plant observed. Common hedge hyssop ( <i>Gratiola ebracteata</i> ) observed in drainage across from Zinfandel Drive. Vernal pools very dry and in poor condition. |
| Boggs Lake hedge-hyssop                                              | Illa Collin Preserve at Mather field; on                                     | 57 <sup>1</sup> | April–August         | No special-status plant observed. Active construction surrounding preserve, no                                                                                                      |



**Table 6. Botanical Reference Population Assessment Summary**

| Species                                                                  | Location of Reference Population                                    | Occurrence ID                                     | Typical Bloom Period | Assessment Summary                                                                                                                   |
|--------------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <i>(Gratiola heterosepala)</i>                                           | Cobble Brook Road off Jaeger Road                                   |                                                   |                      | access. Visual observations indicate dry conditions.                                                                                 |
| Dwarf downingia<br><i>(Downingia pusilla)</i>                            | Phoenix Park, Fair Oaks                                             | 129 <sup>1</sup>                                  | March–May            | No special-status plant observed. Vernal pools very dry and in poor condition.                                                       |
| Legenere<br><i>(Legenere limosa)</i>                                     | Arno Road and Frontage Road                                         | 21 <sup>1</sup>                                   | April–June           | No special-status plant observed. Vernal pools very dry and in poor condition.                                                       |
| Legenere<br><i>(Legenere limosa)</i>                                     | Riley Road, Galt.                                                   | 21 <sup>1</sup>                                   | April–June           | No special-status plant observed. Vernal pools very dry and in poor condition.                                                       |
| Pincushion navarretia<br><i>(Navarretia myersii</i> ssp. <i>myersii)</i> | Twin Cities Road (38.388417°, -121.039917°)                         | 77f0dd52-d335-427b-ac8e-8a292559491d <sup>2</sup> | April–May            | No special-status plant observed. Private land with no access. Visual observations indicate dry conditions.                          |
| Sacramento Orcutt grass<br><i>(Orcuttia viscida)</i>                     | Southeast of Grantline Road, Rancho Cordova (38.58008, -121.196666) | b413c094-cc5f-4ddf-8239-9027599ed5c1 <sup>2</sup> | April–               | No special-status plant observed. Private land with no access. Visual observations indicate dry conditions.                          |
| Sanford's arrowhead<br><i>(Sagittaria sanfordii)</i>                     | Deer Creek Preserve (38.535833, -121.098889)                        | 1f49032a-eb6d-4298-a5af-b74d3a2bbc5c <sup>2</sup> | May–October          | No special-status plant observed. Plants observed were still in vegetative cycle.                                                    |
| Slender Orcutt grass<br><i>(Orcuttia tenuis)</i>                         | —                                                                   | —                                                 | May–September        | No special-status plant observed. No suitable reference population locations due to old occurrences that may be extirpated.          |
| Tuolumne button-celery<br><i>(Eryngium pinnatisectum)</i>                | 1 mile north of Carbondale Road on Lambert Road                     | 20 <sup>1</sup>                                   | May–August           | Approximately 20 individuals observed, in bud and vegetative; however, identifiable due to bracts. Located on the west side of road. |

Sources: CDFW 2022; CNPS 2022.

**Notes:**

<sup>1</sup> California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDDB) occurrence ID.

<sup>2</sup> University of California Davis Herbarium occurrence ID.

Due to the abnormally dry conditions from the lack of annual precipitation events in the 2020 through 2021 water year, species phenology for the region was observed to be atypical, with some species blooming earlier than typical and/or not at all. As such, only one mid to late early bloom protocol-level botanical survey was conducted on May

4, 2021, within the PSA, with focus on suitable habitat features for special-status species known to occur in the Project vicinity. No special-status species were observed during the protocol-level surveys conducted within the PSA.

## 4.5.2 Arborist Tree Survey and Inventory Results

International Society of Arboriculture Certified Arborists with California Tree and Landscaping Consulting Inc. conducted tree surveys and inventory on February 6, 2020, and December 2, 2020, and a total of 22 trees were inventoried within the PSA. Table 7 and Table 8 summarize all California Tree and Landscaping Consulting Inc. survey results within the PSA, as well as the trees' provided protection assignments according to the Sacramento County Tree Preservation Ordinance.

**Table 7. Summary of Trees Inventoried within the Project Study Area**

| Tree Species                                  | Total Trees Inventoried | Protected by Sacramento County Tree Preservation Ordinance | Total Trees Proposed for Removal |
|-----------------------------------------------|-------------------------|------------------------------------------------------------|----------------------------------|
| <b>Protected Species</b>                      |                         |                                                            |                                  |
| Valley Oak ( <i>Quercus lobata</i> )          | 3                       | 1                                                          | 0                                |
| <b>Non-Protected Species</b>                  |                         |                                                            |                                  |
| Incense cedar ( <i>Calocedrus decurrens</i> ) | 1                       | 0                                                          | 1                                |
| Tree of heaven ( <i>Ailanthus altissima</i> ) | 17                      | 0                                                          | 17                               |
| Unknown species                               | 1                       | 0                                                          | 1                                |
| <b>Total</b>                                  | <b>22</b>               | <b>1</b>                                                   | <b>19</b>                        |

Source: CalTLC 2020.

Note: This summary does not include inventoried elderberry shrubs (*Sambucus* sp).

**Table 8. Summary of Tree Inventory Data**

| Field Tag         | Protected | Common Name    | Scientific Name             | Multi-Stems | DBH | Measured At | Canopy Radius | Arborist Rating <sup>a</sup> | Tree Location in PSA |
|-------------------|-----------|----------------|-----------------------------|-------------|-----|-------------|---------------|------------------------------|----------------------|
| 4001 <sup>b</sup> | No        | Incense cedar  | <i>Calocedrus decurrens</i> | —           | 12  | 54          | 8             | 1                            | SDA                  |
| 4002 <sup>b</sup> | No        | Unknown        | <i>Unknown</i>              | —           | 26  | 54          | 0             | 0                            | SDA                  |
| 4403              | No        | Tree of heaven | <i>Ailanthus altissima</i>  | —           | 7   | 36          | 12            | 3                            | SDA                  |
| 4404              | No        | Tree of heaven | <i>Ailanthus altissima</i>  | —           | 9   | 54          | 15            | 3                            | SDA                  |
| 4405              | No        | Tree of heaven | <i>Ailanthus altissima</i>  | —           | 4   | 54          | 5             | 3                            | SDA                  |
| 4406              | No        | Tree of heaven | <i>Ailanthus altissima</i>  | —           | 5   | 54          | 5             | 3                            | SDA                  |

**Table 8. Summary of Tree Inventory Data**

| Field Tag         | Protected | Common Name    | Scientific Name            | Multi-Stems | DBH | Measured At | Canopy Radius | Arborist Rating <sup>a</sup> | Tree Location in PSA |
|-------------------|-----------|----------------|----------------------------|-------------|-----|-------------|---------------|------------------------------|----------------------|
| 4407              | No        | Tree of heaven | <i>Ailanthus altissima</i> | —           | 10  | 36          | 10            | 3                            | SDA                  |
| 4408              | No        | Tree of heaven | <i>Ailanthus altissima</i> | —           | 12  | 36          | 15            | 3                            | SDA                  |
| 4409              | No        | Tree of heaven | <i>Ailanthus altissima</i> | —           | 12  | 24          | 15            | 3                            | SDA                  |
| 4410              | No        | Tree of heaven | <i>Ailanthus altissima</i> | —           | 8   | 24          | 10            | 3                            | SDA                  |
| 4411              | No        | Tree of heaven | <i>Ailanthus altissima</i> | —           | 5   | 54          | 8             | 3                            | SDA                  |
| 4412              | No        | Oak            | <i>Quercus sp.</i>         | —           | 0   | 54          | 0             | 0                            | SDA                  |
| 4413              | No        | Tree of heaven | <i>Ailanthus altissima</i> | 2,3,4,5     | 7   | 54          | 6             | 3                            | SDA                  |
| 4414              | No        | Tree of heaven | <i>Ailanthus altissima</i> | 8,8         | 11  | 54          | 15            | 3                            | SDA                  |
| 4415              | No        | Tree of heaven | <i>Ailanthus altissima</i> | —           | 18  | 36          | 20            | 3                            | SDA                  |
| 4416              | No        | Tree of heaven | <i>Ailanthus altissima</i> | —           | 20  | 54          | 18            | 3                            | AOL                  |
| 4417              | No        | Tree of heaven | <i>Ailanthus altissima</i> | —           | 19  | 24          | 8             | 3                            | AOL                  |
| 4418              | No        | Tree of heaven | <i>Ailanthus altissima</i> | —           | 13  | 54          | 15            | 3                            | AOL                  |
| 4419              | No        | Tree of heaven | <i>Ailanthus altissima</i> | —           | 36  | 54          | 20            | 3                            | AOL                  |
| 4420              | No        | Tree of heaven | <i>Ailanthus altissima</i> | —           | 9   | 54          | 8             | 3                            | AOL                  |
| 4421              | Yes       | Valley oak     | <i>Quercus lobata</i>      | —           | 32  | 54          | 28            | 3                            | AOL                  |
| 4422 <sup>b</sup> | No        | Valley oak     | <i>Quercus lobata</i>      | —           | 0   | 54          | —             | 0                            | AOL                  |

Source: CalTLC 2020.

Notes: DBH = diameter at breast height; PSA = Project Study Area; SDA = Solar Development Area; AOL = Adjacent Other Lands

<sup>a</sup> 0=Dead; 3= Fair.

<sup>b</sup> Recommendations – Remove due to defects.

Based on the tree inventory results captured in Table 7 and Table 8, one tree (i.e., tree number 4421, valley oak) is protected by Sacramento County Tree Preservation Ordinance; however, this tree will not be impacted by Project activities as it resides within the adjacent other lands of the PSA. The remaining trees within the PSA will be removed including 4001 through 4420 and 4422. Tree numbers 4001, 4002, and 4422 are recommended to be removed (per Arborist Report), as they are either dead or have extreme problems and are in severe decline. Tree numbers

4412 and 4422 are native oak trees; however, they are not protected as they are dead (CalTLC 2020). In total, 18 trees within the solar development area and adjacent other lands of the PSA will be directly impacted.

### 4.5.3 Special-Status Wildlife

Results of the database searches of the USFWS Information for Planning and Consultation, the CDFW CNDDDB, and the SSHCP revealed 37 special-status wildlife species that have known occurrences either within the nine USGS 7.5-Minute Quads or within 5 miles of the PSA. Of these 37 special-status wildlife species, 28 have a low to high potential to occur in the PSA or are known to occur in the PSA, and of these, 14 are Covered Species under the SSHCP. In addition, the PSA provides habitat for nesting birds protected by the federal MBTA and CFGC and native bats protected by the CFGC. The remaining nine special-status wildlife species were removed from further consideration due to lack of suitable habitat within or adjacent to the PSA, no known occurrences within 5 miles of the PSA, and/or the PSA being outside of the species' known geographic range. The special-status wildlife species with no potential to occur in the PSA can be referenced in Appendix D. Results of the various wildlife technical studies are summarized in Sections 4.5.3.1 through 4.5.3.18.

#### 4.5.3.1 California Tiger Salamander (*Ambystoma californiense*)

CTS is a federally and state threatened species with a moderate potential to occur in the PSA. CTS is most associated with annual grassland habitats but may also occur within open woodland areas of low hills and valleys. Necessary habitat components for CTS include suitable underground retreats and breeding ponds. CTS spend most of their adult life within suitable underground refugia, such as the burrows of California ground squirrel (*Spermophilus beecheyi*) and pocket gopher (*Thomomys* sp.) or other small mammal burrows; occasionally CTS will occupy human-made structures. Suitable underground refugia for CTS provides cover from predators, protection from desiccation during the dry season, and foraging habitat (Stebbins and McGinnis 2012; USFWS 2005). Suitable breeding sites include vernal pools, seasonal wetlands, stock ponds, or slow-moving streams that do not support fish, although streams are rarely used for reproduction. This species may use permanent human-made ponds if predatory species (e.g., fish, crayfish) are absent (Fisher and Shaffer 1996).

CTS have been reported to migrate up to 1.3 miles between breeding ponds and upland habitat (Orloff 2007); however, only a small number of individuals likely travel this distance (Orloff 2011). The estimated average migration distance is estimated to be 1,844 feet (Searcy and Shaffer 2011). Several studies have indicated that, depending on habitat and life stage, the majority of CTS (between 50% and 95% of adults) travel between 0.09 and 0.5 miles and adult captures declined with increased distance from the breeding pond (Trenham and Shaffer 2005; Orloff 2011),

Although CTS has not been documented in the PSA, this species is known to occur in the vicinity of the PSA. CTS is an SSHCP Covered Species and suitable habitat, as well as SSHCP-modeled aquatic and upland habitat, is present within the PSA (Sacramento County 2018). Specifically, there are known occurrences for CTS 5 miles southeast of the PSA, southeast of Laguna Creek, approximately 0.25 miles southeast of Katena Lane at Clay Station Road (CDFW 2022; USFWS 2022). The site is at the extreme northern extent of the presumed species range (Sacramento County 2018), as the Cosumnes River provides a barrier to movement. A summary of the CTS aquatic larval survey results is provided below.



## California Tiger Salamander Preliminary Habitat Assessment and Aquatic Larval Survey Results

Prior to conducting the CTS aquatic larval surveys, a CTS preliminary habitat assessment of aquatic features was conducted to evaluate for the potential for CTS to occur within 2 kilometers of the solar development area, south of the Cosumnes River. Dudek identified a total of 34 aquatic resources within 2 kilometers of the solar development area. Of these 34 identified resources, a total of 13 could not be excluded as having potential for CTS to occur and 21 were determined to have little to no likelihood for CTS to occur based on ponding duration (either too brief or perennial) and known or suspected presence of predatory fish or bullfrogs (Figure 8, California Tiger Salamander Habitat Assessment). Generally, the features that could not be eliminated as potential CTS aquatic habitat were toward the edge or the 2 kilometer buffer or had significant barriers to movement toward the solar development area such as orchards or concentrations of residential development. The potential upland habitat within the PSA is also not unique or especially high quality, based on the generally low density of small mammal burrows that would be used by CTS.

Dudek conducted CTS aquatic larval surveys on March 16, April 15, and April 28, 2021, within the PSA in accordance with the *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or Negative Findings of California Tiger Salamander* (USFWS 2003). Surveys were conducted by Allie Sennett, a Dudek biologist holding a valid USFWS 10(a)(1)(A) Recovery Permit for the species (Permit No. TE55068D-0). Surveys were specifically conducted within all suitable breeding habitat (i.e., seasonal bodies of standing water) for CTS located in the PSA, which included pond 1 (0.28 acres), pond 2 (0.37 acres), and pond 3 (16.36 acres). Pond 1 and pond 3 are located within adjacent other lands, and pond 2 is located within the solar development area of the PSA (Figure 5). Pond 1 and pond 3 were highly disturbed due to cattle activity and dredging by the landowner. Soils in these ponds were unconsolidated and no emergent vegetation or other structure was present for deposition of eggs. The recent dredging of pond 3 had increased pond depth such that surveyors could only access the pond edges; however, CTS larvae do not typically use such deeper waters. Pond 2 adjoins and overflows into an adjacent vernal pool (VP-08), which was also surveyed for presence of larval CTS; therefore, only the edges of pond could be sampled due to depth and unconsolidated earth.

There were no observations of CTS during the aquatic larval surveys conducted within the PSA (Table 9). There were no incidental observations of CTS within the aquatic features in the PSA during wet season large-listed branchiopod surveys or during focused CTS surveys. Lastly, no incidental observations of CTS or suitable burrows were made in the uplands within the PSA during the additional field studies.

**Table 9. California Tiger Salamander Aquatic Larval Survey Results Summary**

| Survey Pass <sup>1</sup> | Survey Time | Weather Conditions ( °C) | Average Pond Depth (inches) | Pond Inundation (%) | Water Temperature | Turbidity <sup>2</sup> | Aquatic Vegetation Present | Dip Net Area (Square Feet) | Invertebrates Observed | Vertebrate Observed | Larval Length (mm) |
|--------------------------|-------------|--------------------------|-----------------------------|---------------------|-------------------|------------------------|----------------------------|----------------------------|------------------------|---------------------|--------------------|
| <b>Pond 1</b>            |             |                          |                             |                     |                   |                        |                            |                            |                        |                     |                    |
| 1                        | 1125        | 9, clear, windy          | 9                           | 70                  | 14                | H                      | No                         | 5,000                      | Yes                    | No                  | —                  |
| 2                        | 0940        | 9, clear, windy          | 2                           | 60                  | 23                | H                      | Yes                        | 7,300                      | Yes                    | Yes                 | —                  |

**Table 9. California Tiger Salamander Aquatic Larval Survey Results Summary**

| Survey Pass <sup>1</sup> | Survey Time | Weather Conditions ( °C) | Average Pond Depth (inches) | Pond Inundation (%) | Water Temperature | Turbidity <sup>2</sup> | Aquatic Vegetation Present | Dip Net Area (Square Feet)  | Invertebrates Observed | Vertebrate Observed | Larval Length (mm) |
|--------------------------|-------------|--------------------------|-----------------------------|---------------------|-------------------|------------------------|----------------------------|-----------------------------|------------------------|---------------------|--------------------|
| 3                        | 1125        | 9, clear, windy          | ≥10                         | 90                  | 13                | L                      | No                         | Access only at edge of pond | Yes                    | No                  | —                  |
| <b>Pond 2</b>            |             |                          |                             |                     |                   |                        |                            |                             |                        |                     |                    |
| 1                        | 1340        | 22, clear                | 0.80                        | 10                  | 29.8              | H                      | No                         | 1,400                       | Yes                    | No                  | —                  |
| 2                        | 1150        | 22, clear                | 1                           | 40                  | 18.4              | H                      | Yes                        | 4,300                       | Yes                    | Yes                 | —                  |
| 3                        | 1230        | 22, clear                | ≥5                          | 60                  | 23.5              | H                      | No                         | Access only at edge of pond | Yes                    | No                  | —                  |
| <b>Pond 3</b>            |             |                          |                             |                     |                   |                        |                            |                             |                        |                     |                    |
| 1                        | 1228        | 28, clear                | 5.9                         | 60                  | 28.6              | H                      | No                         | 1,000                       | Yes                    | No                  | —                  |
| 2                        | 1540        | 28, clear                | 15.7                        | 20                  | 31.4              | H                      | No                         | 1,300                       | Yes                    | No                  | —                  |
| 3                        | 1728        | 28, clear                | 15                          | 70                  | 29.8              | H                      | No                         | Access only at edge of pond | Yes                    | No                  | —                  |

**Notes:**

<sup>1</sup> Survey Pass 1 – March 16, 2021; Survey Pass 2 – April 15, 2021, Survey Pass 3 – April 28, 2021.

<sup>2</sup> Turbidity – H = High; M= Moderate; L= Low

Pond 1 – Poor quality breeding habitat, highly denuded due to dredging and cattle activity.

Pond 2 – Adjoins/overflows into adjacent vernal pool (i.e., VP-08), which was also surveyed.

Pond 3 – Poor quality breeding habitat, highly denuded due to dredging and cattle activity; highly disturbed with unconsolidated soil; emergent vegetation present; poor quality and highly turbid water; recently dredged by landowner; therefore, only the edges of pond could be sampled due to depth and unconsolidated earth.

#### 4.5.3.2 Western Spadefoot Toad (*Spea hammondi*)

WST is a state SSC with a moderate potential to occur in the PSA. WST is almost completely terrestrial, entering temporal pools and drainages only to breed. The species aestivates within rodent burrows in upland habitats near aquatic breeding sites (Stebbins 1972). The species prefers open areas with sandy or gravelly soils in a variety of habitats, including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, river floodplains, alluvial fans, playas, and alkali flats (Stebbins 2003; Holland and Goodman 1998). However, the species is most common in grasslands with vernal pools or mixed grassland/coastal sage scrub areas and is most active during periods of rain (Holland and Goodman 1998).

Although WST has not been documented in the PSA, this species is known to occur in the PSA vicinity. WST is an SSHCP Covered Species and suitable habitat, as well as SSHCP modeled aquatic and upland habitat, is present within the PSA (Sacramento County 2018). In addition, there are known occurrences for WST within 4.8 miles of the PSA, located on the west side of Sloughhouse Road, approximately 0.90 miles south of Highway 16 (CDFW 2022; USFWS 2022).

## Focused Western Spadefoot Toad Survey Results

Dudek conducted focused surveys for WST within the PSA in conjunction with both the CTS aquatic larval surveys and the protocol-level large listed branchiopod wet season surveys (see Section 4.5.3.15-4.5.3.16) in accordance with the most recent published literature and recommendations from CDFW and under the guidance of Dudek species experts. Both the solar development area and the adjacent other lands within the PSA provide suitable aquatic and upland aestivation sites for WST. No WST or their larval masses were observed during focused surveys.

### 4.5.3.3 Central Valley Steelhead Distinct Population Segment (*Oncorhynchus mykiss irideus*)

The Central Valley steelhead distinct population segment (DPS) is a federally threatened fish species that is known to occur within 5 miles of the PSA along the Cosumnes River. Adult steelhead spawn in relatively high-gradient reaches of tributary rivers and require streams with cool, clean, well-oxygenated water and suitably sized spawning gravel that is generally free of fine sediments (i.e., sand, silt, and clay) (Moyle 2002). Spawning water depth ranges from 15 to 60 centimeters (preferred depth of 35 centimeters) typically in gravel-sized substrate, but also in a mixture of sand-gravel and gravel-cobble (McEwan and Jackson 1996). Juvenile steelhead require year-round flows, suitable water temperatures, adequate cover, and abundant food to support growth and survival to the smolt stage. Summer rearing habitat consisting of pools, cool, well-oxygenated water, and sufficient cover are often cited as major limiting factors for juvenile steelhead in California streams when one or more of these habitat conditions are absent (Moyle 2002).

The Central Valley steelhead DPS species has been documented in the Cosumnes River in the PSA (CDFW 2022). Based on field observations, the Cosumnes River within the PSA is deep, lacks riffle habitat, and contains a bedrock bottom that is absent of sand, gravel, or cobble that is suitable substrate for spawning steelhead. In addition, the river contains limited shaded areas or overhanging banks and in-stream structures, such as downed trees, that normally provide cover and foraging opportunities for rearing juvenile steelhead. For these reasons, habitat for steelhead in the Cosumnes River within the PSA only provides habitat for migrating steelhead and generally lacks spawning and rearing habitat for this DPS. No Central Valley steelhead were observed during reconnaissance-level field surveys.

### 4.5.3.4 Giant Garter Snake (*Thamnophis gigas*)

Giant garter snake (*Thamnophis gigas*) is a federally and state threatened species with a low potential to occur in the PSA. Giant garter snake is primarily aquatic and prefers marshes, sloughs, wetlands, agricultural ditches, rice fields, and other slow moving or still waters with emergent vegetation that is necessary for cover and foraging, and upland habitat consisting of grassy banks and openings for basking and aestivation in the summer and torpor in the winter (Hansen 1988). Suitable habitat components consist of (1) adequate water during the snake's active period (i.e., early spring through mid-fall) to provide a prey base and cover; (2) emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat; (3) upland habitat for basking, cover, and retreat sites; and (4) high-elevation uplands for cover and refuge from flood waters. Giant garter snake is typically absent from larger rivers and other water bodies that support introduced populations of large, predatory fish, and from wetlands with sand, gravel, or rock substrates. Riparian woodlands do not provide habitat because of excessive shade, lack of basking sites, and absence of prey populations (USFWS 2017a).

Giant garter snake has not been documented in the vicinity of the PSA and the habitat in the PSA is of low quality. There are no known occurrences within 5 miles of the PSA (CDFW 2022; USFWS 2022). No giant garter snakes were observed during reconnaissance-level field surveys. Giant garter snake is an SSHCP Covered Species; however, modeled aquatic and upland habitat is not present within the PSA (Sacramento County 2018).

#### 4.5.3.5 Northwestern Pond Turtle (*Actinemys marmorata*)

Northwestern pond turtle (*Actinemys marmorata*) is a state SSC with a moderate potential to occur in the adjacent other lands of the PSA. This species is found in rivers, lakes, streams, ponds, wetlands, ephemeral creeks, reservoirs, agricultural ditches, estuaries, and brackish waters. Northwestern pond turtles prefer areas that provide cover from predators, such as vegetation and algae, as well as basking sites for thermoregulation. Adults tend to favor deeper, slow moving water, whereas hatchlings search for slow and shallow water that is slightly warmer. Terrestrial habitats are used for wintering and usually consist of burrows in leaves and soil. Northwestern pond turtles also lay their eggs in terrestrial habitats normally near water. Although nesting sites should contain deep soils (at least 4 inches deep), the type of soil can vary from sandy to very hard.

Although northwestern pond turtle has not been documented in the PSA, this species is known to occur in the PSA vicinity and marginal suitable habitat is present in the PSA, specifically in the other lands adjacent to the Cosumnes River. Northwestern pond turtle is an SSHCP Covered Species and modeled aquatic and upland habitat is also present within the PSA (Sacramento County 2018). There are known occurrences for northwestern pond turtle within 5 miles of the PSA, located at Laguna Creek approximately 2.70 miles northeast of Clay Station Road (CDFW 2022). No northwestern pond turtles were observed during reconnaissance-level field surveys.

#### 4.5.3.6 Bald Eagle (*Haliaeetus leucocephalus*)

Bald eagle (*Haliaeetus leucocephalus*) is a federally delisted bird species and state endangered and fully protected species that is known to occur within the PSA. In California, most nesting bald eagles are found in the northern part of the state, but pairs nest locally south through the Sierra Nevada, coastal counties in Central and Southern California, and on the Channel Islands. Bald eagles typically nest in large conifers or on rock outcrops near aquatic features, but also occasionally in large hardwoods, such as sycamores and oaks (Anthony et al. 1982; USFWS 1986). They usually nest in one of the largest trees available in proximity of water and generally situated with a prominent overview of the surrounding area (Buehler 2000). Bald eagles preferentially forage on fish and waterfowl, but their diet varies regionally and seasonally in response to locally available resources, and often includes a variety of mammals, as well as carrion, especially in winter (Todd et al. 1982; Stalmaster 1987; Ewins and Andress 1995; Buehler 2000).

Although nesting habitat throughout the PSA is generally absent to limited, bald eagles were observed in both the PSA and the surrounding vicinity during field studies conducted by Dudek in 2020–2021. Specifically, one eagle was observed perched on a wooden fence post in the vicinity of an anchovy production facility (i.e., north of Meiss Road), and another was observed up to three separate times perched on a tree snag on an island in the middle of pond 3 in the southeast corner of the PSA in the adjacent other lands. These eagles were likely winter migrants to the area and/or foraging along the Cosumnes River corridor.



#### 4.5.3.7 Bank Swallow (*Riparia riparia*)

Bank swallow (*Riparia riparia*) is a state threatened bird species with a moderate potential to occur in the PSA. In California, this species is found primarily west of deserts in riparian and other lowland habitats during the spring–fall period. In summer, bank swallows are restricted to riparian, lacustrine, and coastal areas with vertical banks, bluffs, and cliffs with fine textured sandy soils, into which they dig nesting holes. Approximately 75% of the breeding population in California occurs along banks of the Sacramento and Feather Rivers in the northern Central Valley. Breeding colonies can have between 10 and 1,500 nesting pairs, but typically have between 100 and 200 nesting pairs (CDFW 2022).

The PSA provides suitable migratory habitat for bank swallow but is located outside the breeding range for this species. There are known occurrences of bank swallow within 5 miles of the PSA, located on the Cosumnes River approximately 0.25 miles downstream of Bridge House (CDFW 2022; Cornell Lab 2021; USFWS 2022). No bank swallows were observed during reconnaissance-level field surveys.

#### 4.5.3.8 Burrowing Owl (*Athene cunicularia*)

BUOW is a state SSC known to occur in the PSA. In California, BUOWs are yearlong residents of open, dry grassland and desert habitats and grass, forb, and open shrub stages of pinyon-juniper and ponderosa pine habitats (CDFW 2022). Preferred habitat is typified by short, sparse vegetation with few shrubs, level to gentle topography, and well-drained soils. The presence of burrows is the most essential component of BUOW habitat, as they are required for nesting, roosting, cover, and caching prey (Poulin et al. 2011). In California, BUOWs most commonly live in burrows created by California ground squirrels. BUOWs may also occur in human-altered landscapes such as agricultural areas, ruderal grassy fields, vacant lots, and pastures if the vegetation structure is suitable (i.e., open, and sparse), usable burrows are available, and foraging habitat occurs in proximity (Gervais et al. 2008). Debris piles, riprap, culverts, and pipes can also be used for nesting, shelter, and roosting.

There is suitable habitat for BUOW in the PSA, as well as recorded presence. BUOW is an SSHCP Covered Species and modeled wintering habitat is present within the PSA (Sacramento County 2018). A summary of the protocol-level BUOW surveys results is provided below.

#### Protocol-Level Burrowing Owl Breeding Season Survey Results

Dudek conducted protocol-level BUOW surveys within the PSA and visual surveys within the surrounding vicinity (i.e., up to 500 feet) on February 18 and 25, 2021 (Pass 1); March 4 and 16, 2021 (Pass 2); April 9 and 15, 2021 (Pass 3), and May 3, 2021 (Pass 4). In addition, in accordance with recommendations from CDFW, two additional breeding season surveys were conducted in 2022: June 2 and 3, 2022 (Pass 5), and July 7 and 9, 2022 (Pass 6). Surveys were conducted in accordance with the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012), and the *Burrowing Owl Survey Protocol and Mitigation Guidelines* (California Burrowing Owl Consortium 1993). A total of 22 BUOW observations, mostly of suitable burrows but including two visual observations of BUOW, were made during the four survey passes conducted in 2021. Specifically, the two visual observations were of individual BUOWs and not ancillary observations such as burrows, whitewash, etc. Observations were made within areas that provided suitable burrowing and foraging habitat, including both the solar development area and the adjacent other lands within the PSA (Figure 11, Burrowing Owl, Swainson's Hawk, and Tricolored Blackbird Survey Results; Table 10).

**Table 10. Protocol-Level Burrowing Owl Breeding Season Survey Results Summary**

| Date                 | Observation Summary           | Observation Location (decimal degrees) |               |
|----------------------|-------------------------------|----------------------------------------|---------------|
|                      |                               | Latitude                               | Longitude     |
| <b>Survey Pass 1</b> |                               |                                        |               |
| 2/18/2021            | Burrow - potential, single    | 38.46777976°                           | -121.1795649° |
| 2/18/2021            | Burrow - potential, single    | 38.47138943°                           | -121.1811695° |
| 2/18/2021            | Burrow - potential, single    | 38.48260533°                           | -121.1887913° |
| 2/25/2021            | Burrow - potential, single    | 38.48344044°                           | -121.1933353° |
| 2/25/2021            | Visual - flushed              | 38.47075249°                           | -121.1851769° |
| 2/25/2021            | Burrow - potential, single    | 38.46530577°                           | -121.1830474° |
| 2/25/2021            | Burrow - potential, single    | 38.46525486°                           | -121.1830911° |
| 2/25/2021            | Burrow - potential, single    | 38.46460451°                           | -121.1851927° |
| 2/25/2021            | Burrow - potential, single    | 38.46465651°                           | -121.1849397° |
| 2/25/2021            | Burrow - potential, single    | 38.46552494°                           | -121.1860965° |
| 2/25/2021            | Burrow - potential, single    | 38.46707128°                           | -121.1830843° |
| <b>Survey Pass 2</b> |                               |                                        |               |
| 3/4/2021             | Burrow - potential, single    | 38.46957097°                           | -121.1886550° |
| 3/4/2021             | Burrow - potential, single    | 38.47086409°                           | -121.1883382° |
| 3/4/2021             | Burrows - potential, multiple | 38.46942884°                           | -121.1895094° |
| 3/16/2021            | Burrow - potential, single    | 38.46668135°                           | -121.1792350° |
| <b>Survey Pass 3</b> |                               |                                        |               |
| 4/9/2021             | Burrow - potential, single    | 38.48130423°                           | -121.1872571° |
| 4/9/2021             | Burrows - potential, multiple | 38.48023688°                           | -121.1880083° |
| 4/15/2021            | Burrows - potential, multiple | 38.46501097°                           | -121.1844780° |
| 4/15/2021            | Burrow - potential, single    | 38.46952106°                           | -121.1840387° |
| 4/15/2021            | Burrow - potential, single    | 38.46487298°                           | -121.1859698° |
| 4/15/2021            | Burrow - potential, single    | 38.46586949°                           | -121.1846340° |
| <b>Survey Pass 4</b> |                               |                                        |               |
| 5/4/2021             | Visual - flushed              | 38.47255171°                           | -121.1794499° |
| <b>Survey Pass 5</b> |                               |                                        |               |
| 6/3/2022             | No observations               | —                                      | —             |
| <b>Survey Pass 6</b> |                               |                                        |               |
| 7/9/2022             | No observations               | —                                      | —             |

#### 4.5.3.9 Common Yellowthroat (*Geothlypis trichas sinuosa*)

Common yellowthroat (*Geothlypis trichas sinuosa*) is a state SSC with a low potential to nest in the PSA. This species nests and forages in emergent wetlands including woody swamp, brackish marsh, and freshwater marsh. Common yellowthroat also breeds in valley foothill riparian, and occasionally in desert riparian, annual grassland, and perennial grassland habitats. During migration, they are found in other moist habitats with low dense vegetation (CDFW 2022).

Although the PSA provides suitable foraging habitat for common yellowthroat, this species is not common in inland habitats during the breeding season, especially in the Central Valley. In addition, there are no known occurrences of this species within 5 miles of the PSA (CDFW 2022; USFWS 2022). No common yellowthroats were observed during reconnaissance-level field surveys.

#### 4.5.3.10 Golden Eagle (*Aquila chrysaetos*)

Golden eagle (*Aquila chrysaetos*) is a federally fully protected species and a state watchlist species with a low potential to nest in the PSA. Golden eagle is a year-round, diurnally active species that is a permanent resident and migrant throughout California where it tends to occupy mountain, foothill, and desert areas. Foraging habitat for this species includes open habitats with scrub, grasslands, desert communities, and agricultural areas. This species typically nests on cliffs within canyons and escarpments and in large trees (generally in open habitats) primarily within rugged, hilly, or mountainous terrain (Garrett and Dunn 1981; Johnsgard 1990). Most nests are located on cliffs or trees near forest edges or in small stands near open fields, but golden eagle is also known to utilize electrical transmission towers and similarly sized structures as nest sites (Garrett and Dunn 1981; Johnsgard 1990; Kochert et al. 2002; Scott 1985). Golden eagles commonly build, maintain, and variably use multiple alternative nest sites in their breeding territories, routinely refurbishing and reusing individual nests over many years.

The PSA lacks cliff and canyon nesting habitat and only provides foraging habitat for golden eagle. There are no known occurrences of golden eagle within 5 miles of the PSA (CDFW 2022; USFWS 2022). No golden eagles were observed during reconnaissance-level field surveys.

#### 4.5.3.11 Swainson's Hawk (*Buteo swainsoni*)

SWHA is a state threatened species known to occur in the PSA. In California, this species nests in the Central Valley and smaller adjacent valleys, the Klamath Basin, the Northeastern Plateau, Lassen County, and the Mojave Desert. It breeds in riparian areas, stands of trees in agricultural environments, oak savannah, Joshua trees (*Yucca brevifolia*) in the Mojave Desert, and juniper-sage flats. In the San Joaquin Valley, it nests in riparian areas and in isolated tree clusters, often near rural residences or other areas with some human disturbance. Alfalfa fields are the favored foraging areas of SWHA in the Central Valley, but the species also forages in undisturbed grasslands, fallow agricultural fields, and some row crops.

There are known occurrences of SWHA within the PSA. SWHA is an SSHCP Covered Species and modeled foraging and nesting habitat is located within and immediately adjacent to the PSA (Sacramento County 2018). A summary of the protocol-level SWHA survey results is provided below.

#### Protocol-Level Swainson's Hawk Survey Results

Dudek conducted protocol-level SWHA surveys within the PSA and visual surveys up to 0.5 miles from the solar development area on February 18 and 25, 2021 (Pass 1); March 4 and March 16, 2021 (Pass 2); April 9 and 15, 2021 (Pass 3); May 3, 2021 (Pass 4); and June 4, 2021 (Pass 5). In addition, in accordance with recommendations from CDFW, two additional SWHA breeding season surveys were conducted in 2022: June 2 and 3, 2022 (Pass 6), and July 7 and 9, 2022 (Pass 7). Surveys were conducted in accordance with the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (SHTAC 2000). A total of nine SWHA observations, including foraging and courting, were made during the five survey passes conducted in 2021. No nesting observations were made. Observations were made within areas that primarily provided suitable foraging

habitat, as well as some nesting habitat, including both the solar development area and the adjacent other lands within the PSA (Figure 11; Table 11).

**Table 11. Protocol-Level Swainson’s Hawk Survey Results Summary**

| Date                 | Observation Summary                   | Observation Location (decimal degrees) |               |
|----------------------|---------------------------------------|----------------------------------------|---------------|
|                      |                                       | Latitude                               | Longitude     |
| <b>Survey Pass 1</b> |                                       |                                        |               |
| 2/25/2021            | Raptor nest - unoccupied              | 38.47971791°                           | -121.1895586° |
| <b>Survey Pass 2</b> |                                       |                                        |               |
| 3/16/2021            | Foraging - juvenile                   | 38.48067111°                           | -121.1836011° |
| <b>Survey Pass 3</b> |                                       |                                        |               |
| 4/9/2021             | Visual flight                         | 38.47189084°                           | -121.1801946° |
| 4/9/2021             | Visual flight                         | 38.47821603°                           | -121.1885398° |
| 4/9/2021             | Perched                               | 38.48351407°                           | -121.1889381° |
| 4/14/2021            | Visual flight- pair                   | 38.48424802°                           | -121.1885927° |
| 4/15/2021            | Foraging                              | 38.46309840°                           | -121.1824983° |
| 4/15/2021            | Courting pair                         | 38.46538260°                           | -121.1829533° |
| <b>Survey Pass 4</b> |                                       |                                        |               |
| 5/4/2021             | No observations                       | —                                      | —             |
| <b>Survey Pass 5</b> |                                       |                                        |               |
| 6/8/2021             | No observations                       | —                                      | —             |
| <b>Survey Pass 6</b> |                                       |                                        |               |
| 6/2/2022             | Visual flight, potential nesting site | 38.483694°                             | -121.186524°  |
| <b>Survey Pass 7</b> |                                       |                                        |               |
| 7/7/2022             | Visual flight, potential nesting site | 38.483694°                             | -121.186524°  |

### Swainson’s Hawk and Other Raptor Foraging and Land Use Study Results

As noted in Section 3.2.3.8, Estep Environmental Consulting conducted two 1-year studies in 2013 and 2021 to assess raptor use of solar array fields in Sacramento County, including the Dillard Road solar array that is immediately adjacent to the Project (Estep Environmental Consulting 2013, 2021). Refer to Section 3.2.3.8 for details on the findings of the 2013 study and Appendix A for the report synthesizing findings of the 2013 and 2021 studies. The studies indicate that raptors including SWHA continued to use moderately sized solar array fields following conversion from cultivated uses. Results of the strip transect road survey indicate raptor use in general, and specifically SWHA and American kestrel use, of solar array fields exceeds expected use based on their availability within the agricultural landscape. This suggests that solar array fields are not avoided by these species and may be selected at a greater frequency than many cultivated land cover types. The stationary observation point surveys confirmed use within solar array fields, including foraging or potential foraging use by all species. The study suggested that management of a grassland substrate to promote rodent populations and maintaining this substrate at a height that promotes visibility and access to prey is favorable to continued raptor usage. Unlike most crop



types, these grassland conditions are available in solar fields throughout the spring and summer breeding season, and thus can provide a consistent and available source of prey.

#### 4.5.3.12 Tricolored Blackbird (*Agelaius tricolor*)

TRBL is a state threatened species with known occurrences within the PSA. This species typically nests in freshwater marshes with dense growths of emergent vegetation dominated by cattails or bulrushes, but has also established colonies in willows, blackberries (*Rubus* spp.), and a variety of other types of dense, herbaceous vegetation, such as thistles (*Cirsium* and *Centaurea* spp.) and nettles (*Urtica* spp.). TRBLs forage in a variety of habitats, such as grasslands and croplands, where high densities of suitable insect prey are found.

SSHCP has modeled nesting and foraging TRBL habitat located within the solar development area (Sacramento County 2018). In addition, there are several known occurrences of TRBL within 5 miles of the PSA, with the nearest approximately 0.40 miles south of Dillard Road (which runs adjacent to the PSA) at its intersection with Highway 16 (CDFW 2022; USFWS 2022).

There are known occurrences of TRBL within the PSA. A summary of the TRBL focused survey results is provided below. TRBL is an SSHCP Covered Species and modeled nesting, and foraging habitat is located within the PSA (Sacramento County 2018).

#### Tricolored Blackbird Focused Survey Results

Dudek conducted focused TRBL surveys within the PSA on February 18 and 25, 2021 (pass 1); March 16 and 17, 2021 (Pass 2); April 9 and 15, 2021 (Pass 3); and May 3, 2021 (Pass 4). Surveys were conducted in accordance with the *Staff Guidance Regarding Avoidance of Impacts to Tricolored Blackbird Breeding Colonies on Agricultural Fields* (CDFW 2015). A total of six TRBL species observations, including foraging, were observed during the four total survey passes conducted in 2021. No nesting colonies were observed. The PSA, both within the solar development area and the adjacent other lands, provides suitable foraging habitat for TRBL. Nesting habitat is generally absent from the PSA; however, sites exist just outside the western PSA near the Cosumnes River (Table 12; Figure 11).

**Table 12. Focused Tricolored Blackbird Survey Results Summary**

| Date                 | Observation Summary                         | Observation Location (decimal degrees) |               |
|----------------------|---------------------------------------------|----------------------------------------|---------------|
|                      |                                             | Latitude                               | Longitude     |
| <b>Survey Pass 1</b> |                                             |                                        |               |
| 2/18/2021            | No observations                             | —                                      | —             |
| 2/25/2021            | No observations                             | —                                      | —             |
| <b>Survey Pass 2</b> |                                             |                                        |               |
| 3/17/2021            | Perched - mixed flock                       | 38.48186885°                           | -121.1855454° |
| 3/17/2021            | Perched - mixed flock                       | 38.48186885°                           | -121.1855454° |
| <b>Survey Pass 3</b> |                                             |                                        |               |
| 4/9/2021             | Vocalizing                                  | 38.47405814°                           | -121.1875744° |
| 4/9/2021             | Foraging, perched, vocalizing - mixed flock | 38.48160789°                           | -121.1859765° |

**Table 12. Focused Tricolored Blackbird Survey Results Summary**

| Date                 | Observation Summary           | Observation Location (decimal degrees) |               |
|----------------------|-------------------------------|----------------------------------------|---------------|
|                      |                               | Latitude                               | Longitude     |
| 4/9/2021             | Perched, vocalizing - various | 38.48044310°                           | -121.1824292° |
| 4/15/2021            | Perched, vocalizing - various | 38.47428959°                           | -121.1891113° |
| <b>Survey Pass 4</b> |                               |                                        |               |
| 5/3/2021             | No observations               | —                                      | —             |

#### 4.5.3.13 White-Tailed Kite (*Elanus leucurus*)

White-tailed kite (*Elanus leucurus*) is a state fully protected species known to occur in the PSA. White-tailed kites occur in grasslands, marshes, and lowland scrub habitats, and nest in dense foliage in taller- to medium-size trees near foraging habitat. This species may also forage in meadows, agricultural fields, other types of emergent wetlands, and disturbed lands. White-tailed kites feed principally on rodents, especially voles (CDFW 2022).

There are several known occurrences for white-tailed kite in or adjacent to the PSA (CDFW 2022). The SSHCP shows one white-tailed kite occurrence and modeled nesting habitat along the riparian habitat adjacent to the Cosumnes River at the northern edge of Assessor's Parcel No. 126-0110-001. There is also SSHCP modeled foraging habitat within the PSA (Sacramento County 2018). During the reconnaissance-level biological surveys conducted by Dudek in 2021, various observations of white-tailed kite were made in both the solar development area and adjacent other lands of the PSA. Observations specifically included foraging, hovering, perching, and flight.

#### 4.5.3.14 Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*)

VELB is a federally threatened species known to occur in the PSA. VELB is completely dependent on its host plant, elderberry (*Sambucus* ssp.), which occurs in riparian and other woodland communities in California's Central Valley and the associated foothills. Female beetles lay their eggs in crevices on the stems or on the leaves of living elderberry plants. When the eggs hatch, larvae bore into the stems. The larval stages last for 1 to 2 years. The fifth instar larvae create emergence holes in the stems and then plug the holes and remain in the stems through pupation. Adults emerge through the emergence holes from late March through June. The short-lived adult beetles forage on leaves and flowers of elderberry shrubs.

There are several known occurrences of this species documented in the western part of the PSA (CDFW 2022; USFWS 2007a; USFWS 2022). VELB is an SSHCP Covered Species and modeled habitat is present within the PSA (Sacramento County 2018). A summary of the VELB focused survey results is provided below.

#### Valley Elderberry Longhorn Beetle Focused Survey Results

Dudek conducted focused surveys for VELB within the PSA on February 19 and 25, 2021, and January 12, 2022; see Table 13 and Figure 9, Valley Elderberry Longhorn Beetle Results. Surveys were conducted in accordance with the *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (USFWS 1999) and specifically focused on

the assessment of known locations of elderberry shrubs to evaluate for evidence of VELB. Surveys were conducted prior to the onset of the typical known emergence period for adult VELB (i.e., March through June).

A total of 13 elderberry shrubs, all identified as *Sambucus nigra*, were assessed. Of these 13 shrubs, 4 occur within the solar development area and/or within 165 feet (i.e., typical avoidance buffer area) of the solar development area of the PSA. No VELB, egg/larval galleries, or frass were observed on any of the shrubs. Bore and/or exit holes were observed on four of the 13 shrubs, specifically on shrub ID 2, ID 6, ID 8, and ID 12. Shrub ID 2 is in fair condition and located approximately 385 feet from the Cosumnes River riparian habitat. Shrub ID 6 is in poor condition and located in an upland area approximately 1,650 feet from the riparian habitat. Shrub ID 6 is located within the adjacent other lands directly adjacent to the solar development area. Shrub IDs 8 and 12 are both in good condition and are located within 130 and 335 feet of riparian habitat, respectively. The condition of the bore holes observed reflect potential past use of boring insects and are not conclusive to VELB occupancy. No other elderberry shrub observations relevant to VELB were made during focused surveys.

**Table 13. Focused Valley Elderberry Longhorn Beetle Survey Results Summary**

| Shrub ID (Shrub-Stem) | Dead/Alive <sup>1</sup> | General Condition <sup>2</sup> | Approx. no. of Stems | Approx. no. of Stems ≥1 in. DBH | Beetle Observed <sup>3</sup> | Eggs/Larval Gallery <sup>3</sup> | Bore Holes <sup>3</sup> | Frass <sup>3</sup> | Other | Location (decimal degrees) | Habitat             | Land Use                          | PSA Location <sup>4</sup> | Approx. Distance from Riparian Habitat (Ft) | Approx. Distance from Work Limits (Ft) | Notes                                                                                                                                                              |
|-----------------------|-------------------------|--------------------------------|----------------------|---------------------------------|------------------------------|----------------------------------|-------------------------|--------------------|-------|----------------------------|---------------------|-----------------------------------|---------------------------|---------------------------------------------|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1-A                   | A                       | G                              | 30                   | 10                              | N                            | N                                | N                       | N                  | —     | 38.458791°, -121.191745°   | Riparian            | Adjacent agriculture              | AOL                       | 0, Within                                   | 1,545                                  | Two shrubs present at this location on Cosumnes River levee slope.                                                                                                 |
| 1-B                   | A                       | G                              | 25                   | 7                               | N                            | N                                | N                       | N                  | —     | 38.458791°, -121.191745°   | Riparian            | Adjacent agriculture              | AOL                       | 0, Within                                   | 1,545                                  | Two shrubs present at this location on Cosumnes River levee slope.                                                                                                 |
| 2-A                   | A                       | F                              | 75                   | 25                              | N                            | N                                | N                       | N                  | —     | 38.484704°, -121.189644°   | Converted grassland | Agricultural                      | AOL                       | 275                                         | 850                                    | Three shrubs present at this location.                                                                                                                             |
| 2-B                   | A                       | F                              | 150                  | 45                              | N                            | N                                | N                       | N                  | —     | 38.484704°, -121.189645°   | Converted grassland | Agricultural                      | AOL                       | 275                                         | 850                                    | Three shrubs present at this location.                                                                                                                             |
| 2-C                   | A                       | F                              | 300                  | 95                              | N                            | N                                | Y                       | N                  | —     | 38.484704°, -121.189646°   | Converted grassland | Agricultural                      | AOL                       | 275                                         | 850                                    | Three shrubs present at this location. Bore holes only present on old bark (not new growth), in areas where outer bark has begun to sluff of exposing the cambium. |
| 3-A                   | A                       | G                              | 20                   | 3                               | N                            | N                                | N                       | N                  | —     | 38.485637°, -121.192488°   | Riparian            | Adjacent agriculture              | AOL                       | 0, Within                                   | 1,640                                  | Six shrubs present at this location on Cosumnes River levee slope.                                                                                                 |
| 3-B                   | A                       | G                              | 25                   | 5                               | N                            | N                                | N                       | N                  | —     | 38.485637°, -121.192488°   | Riparian            | Adjacent agriculture              | AOL                       | 0, Within                                   | 1,640                                  | Six shrubs present at this location on Cosumnes River levee slope.                                                                                                 |
| 3-C                   | A                       | G                              | 25                   | 5                               | N                            | N                                | N                       | N                  | —     | 38.485637°, -121.192488°   | Riparian            | Adjacent agriculture              | AOL                       | 0, Within                                   | 1,640                                  | Six shrubs present at this location on Cosumnes River levee slope.                                                                                                 |
| 3-D                   | A                       | G                              | 30                   | 5                               | N                            | N                                | N                       | N                  | —     | 38.485637°, -121.192488°   | Riparian            | Adjacent agriculture              | AOL                       | 0                                           | 1,640                                  | Six shrubs present at this location on Cosumnes River levee slope.                                                                                                 |
| 3-E                   | A                       | G                              | 45                   | 7                               | N                            | N                                | N                       | N                  | —     | 38.485637°, -121.192488°   | Riparian            | Adjacent agriculture              | AOL                       | 0                                           | 1,640                                  | Six shrubs present at this location on Cosumnes River levee slope.                                                                                                 |
| 3-F                   | A                       | G                              | 55                   | 10                              | N                            | N                                | N                       | N                  | —     | 38.485637°, -121.192488°   | Riparian            | Adjacent agriculture              | AOL                       | 0                                           | 1,640                                  | Six shrubs present at this location on Cosumnes River levee slope.                                                                                                 |
| 4-A                   | A                       | P                              | 15                   | 4                               | N                            | N                                | N                       | N                  | —     | 38.470930°, -121.185041°   | Converted grassland | Agricultural                      | SDA                       | 4,200                                       | 0                                      | Two shrubs present at this location. Isolated pasture near fence line.                                                                                             |
| 4-B                   | A                       | F                              | 35                   | 6                               | N                            | N                                | N                       | N                  | —     | 38.470930°, -121.185041°   | Converted grassland | Agricultural                      | SDA                       | 4,200                                       | 0                                      | Two shrubs present at this location. Isolated pasture near fence line.                                                                                             |
| 5                     | A                       | F                              | 8                    | 3                               | N                            | N                                | N                       | N                  | —     | 38.479077°, -121.190647°   | Converted grassland | Agricultural, Irrigation Drainage | AOL                       | 1,550                                       | 590                                    | On irrigation drainage at fence line.                                                                                                                              |
| 6                     | A                       | P                              | 400                  | 85                              | N                            | N                                | Y                       | N                  | —     | 38.480429°, -121.188664°   | Converted grassland | Agricultural                      | AOL                       | 1,650                                       | 0                                      | Highly degraded due to cattle use. Dead valley oak tree                                                                                                            |



**Table 13. Focused Valley Elderberry Longhorn Beetle Survey Results Summary**

| Shrub ID (Shrub-Stem) | Dead/Alive <sup>1</sup> | General Condition <sup>2</sup> | Approx. no. of Stems | Approx. no. of Stems ≥1 in. DBH | Beetle Observed <sup>3</sup> | Eggs/Larval Gallery <sup>3</sup> | Bore Holes <sup>3</sup> | Frass <sup>3</sup> | Other | Location (decimal degrees) | Habitat               | Land Use             | PSA Location <sup>4</sup> | Approx. Distance from Riparian Habitat (Ft) | Approx. Distance from Work Limits (Ft) | Notes                                                                                                                                                                                                                                          |
|-----------------------|-------------------------|--------------------------------|----------------------|---------------------------------|------------------------------|----------------------------------|-------------------------|--------------------|-------|----------------------------|-----------------------|----------------------|---------------------------|---------------------------------------------|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                       |                         |                                |                      |                                 |                              |                                  |                         |                    |       |                            |                       |                      |                           |                                             |                                        | growing within and through shrub. Bore holes not observed on new growth. Majority of new growth is less than 1 inch DBH. Only stems at base where dead valley oak tree is present are greater than 1 inch DBH. Cambium and heartwood exposure. |
| 7                     | A                       | G                              | 70                   | 15                              | N                            | N                                | N                       | N                  | —     | 38.480377°, -121.195489°   | Converted grassland   | Adjacent agriculture | AOL                       | 145                                         | 1,970                                  | On adjacent Cosumnes River Levee.                                                                                                                                                                                                              |
| 8                     | A                       | G                              | 45                   | 30                              | N                            | N                                | Y                       | N                  | —     | 38.484131°, -121.188719°   | Converted agriculture | Adjacent agriculture | AOL                       | 130                                         | 535                                    | Elderberry shrub was obstructed by blackberry shrubs; located adjacent to barn.                                                                                                                                                                |
| 9                     | A                       | G                              | 45                   | 12                              | N                            | N                                | N                       | N                  | —     | 38.483398°, -121.189090°   | Converted agriculture | Adjacent agriculture | AOL                       | 200                                         | 535                                    | Located adjacent to barn.                                                                                                                                                                                                                      |
| 10                    | A                       | G                              | 80                   | 20                              | N                            | N                                | N                       | N                  | —     | 38.484051°, -121.88989°    | Converted agriculture | Adjacent agriculture | AOL                       | 185                                         | 535                                    | Located adjacent to barn.                                                                                                                                                                                                                      |
| 11                    | A                       | G                              | 70                   | 30                              | N                            | N                                | N                       | N                  | —     | 38.483701°, -121.18893°    | Converted agriculture | Adjacent agriculture | AOL                       | 150                                         | 535                                    | Elderberry shrub was obstructed by blackberry shrubs; located adjacent to barn.                                                                                                                                                                |
| 12                    | A                       | G                              | 90                   | 50                              | N                            | N                                | Y                       | N                  | —     | 38.483701°, -121.189249°   | Converted agriculture | Adjacent agriculture | AOL                       | 335                                         | 485                                    | Located adjacent to barn.                                                                                                                                                                                                                      |
| 13                    | A                       | G                              | 30                   | 5                               | N                            | N                                | N                       | N                  | —     | 38.470444°, -121.184741°   | Converted grassland   | Adjacent agriculture | SDA                       | 4,300                                       | 0                                      | Base of elderberry shrub was wrapped in barbed wire; located adjacent to barn.                                                                                                                                                                 |

**Notes:**

<sup>1</sup> A = Alive; D = Dead

<sup>2</sup> G = Good; F = Fair; P = Poor

<sup>3</sup> N = No, Y = Yes

<sup>4</sup> Project Study Area (PSA) Locations: AOL = Adjacent Other Lands; SDA = Solar Development Area.

#### 4.5.3.15 Vernal Pool Fairy Shrimp (*Branchinecta lynchi*)

Vernal pool fairy shrimp is a federally threatened species with a low potential to occur in the PSA. This species is known to occupy vernal pools or other areas of similar hydrology that pool continuously for enough time to support its average reproductive period of 43 days (Helm 1998). Vernal pool fairy shrimp does not occupy perennial waters or creeks. They are most frequently found in small vernal pools (less than 0.05 acres), especially pool and swale complexes where they can move between individual pools (USFWS 2005).

Vernal pool fairy shrimp is known to occur in the vicinity of the PSA, but this species was not observed during protocol-level dry and wet season surveys. Suitable habitat and SSHCP modeled habitat are present in the PSA, which include vernal pools (Sacramento County 2018). There are various DCH units for vernal pool fairy shrimp within 5 miles of the PSA, with the nearest 1.3 miles southeast of the PSA (USFWS 2022). In addition, there are several known occurrences for this species within 5 miles of the PSA, with the nearest being located within 0.25 miles of the PSA on the south side of Meiss Road, approximately 0.75 miles southeast of the intersection at Dillard Road (CDFW 2022).

A summary of the protocol-level large listed branchiopod dry and wet season survey results is provided below in Section 4.5.3.15-4.5.3.16.

#### 4.5.3.16 Vernal Pool Tadpole Shrimp (*Lepidurus packardii*)

Vernal pool tadpole shrimp is a federally endangered and SSHCP Covered Species known to occur in the PSA. This species occupies vernal pools and seasonally ponded areas within vernal swales. Aquatic habitat for vernal pool tadpole shrimp is typically mud or grass-bottomed with clear to tea-colored or highly turbid water. These species are typically found in depressional pools within grassland habitat (Sacramento County 2018).

Vernal pool tadpole shrimp has been documented in the PSA (Sacramento County 2018) but was not observed during protocol-level dry and wet season surveys of the PSA during 2020–2021. Suitable habitat and SSHCP modeled habitat are present within the solar development area, including vernal pools (CDFW 2022; Sacramento County 2018). In addition, there are various DCH units for vernal pool tadpole shrimp within 5 miles of the PSA, with the nearest 1.3 miles southeast of the PSA (USFWS 2022).

A summary of the protocol-level large listed branchiopod dry and wet season survey results is provided below.

#### Protocol-Level Large Listed Branchiopod Dry Season Survey Results

Dry season branchiopod surveys were conducted in October and November 2020; see Table 14. Soil samples were submitted to Dr. Brent Helm at Helm Biological Consulting to process the dry soil samples for the presence of cysts from fairy shrimp and tadpole shrimp. Dry season surveys were negative for federally listed large branchiopods (Figure 10, Dry and Wet Season Large Listed Branchiopod Results). However, six features contained cysts belonging to the non-listed California fairy shrimp (*Lindleriella occidentalis*) (SLLC 2021a).

**Table 14. Summary of Dry Season Survey Dates, Site Conditions, and Biologists Present**

| Date of Survey    | Site Conditions                              | Permitted Biologist                     | Assisting Biologists                                         |
|-------------------|----------------------------------------------|-----------------------------------------|--------------------------------------------------------------|
| October 13, 2020  | 66°F–90°F; 0%–10% cloud cover; 0–6 mph wind  | Heather Moine <sup>1</sup>              | Allie Sennett                                                |
| October 14, 2020  | 62°F–91°F; 0% cloud cover; 1–7 mph wind      | Heather Moine                           | Allie Sennett                                                |
| October 15, 2020  | 57°F–90°F; 0% cloud cover; 0–5 mph wind      | Heather Moine                           | Emily Scricca                                                |
| October 19, 2020  | 55°F–89°F; 0% cloud cover; 0–4 mph wind      | Heather Moine                           | Laura Burris                                                 |
| October 20, 2020  | 54°F–88°F; 0% cloud cover; 0–4 mph wind      | Heather Moine, Paul Lemons <sup>2</sup> | Laura Burris, Anna Godinho, Emily Scricca, and Allie Sennett |
| October 21, 2020  | 54°F–88°F; 0% cloud cover; 0–4 mph wind      | Heather Moine, Paul Lemons              | Laura Burris, Anna Godinho, Emily Scricca, and Allie Sennett |
| October 22, 2020  | 56°F–78°F; 0% cloud cover; 0–6 mph wind      | Heather Moine                           | Anna Godinho, Allie Sennett                                  |
| October 23, 2020  | 45°F–59°F; 0% cloud cover; 0–3 mph wind      | Heather Moine                           | Anna Godinho                                                 |
| November 11, 2020 | 42°F–58°F; 80%–90% cloud cover; 0–4 mph wind | Heather Moine                           | Anna Godinho, Allie Sennett                                  |

**Notes:**<sup>1</sup> Heather Moine (TE-60147A-1).<sup>2</sup> Paul Lemons (TE-051248-6).**Protocol-Level Large Listed Branchiopod Wet Season Survey Results**

Wet season branchiopod surveys were conducted February through April 2021, with surveys occurring every 14 days; see Table 15. Wet season surveys were negative for federally listed large branchiopods (Figure 10) (SSLLC 2021b).

**Table 15. Summary of Wet Season Survey Dates, Site Conditions, and Biologists Present**

| Date of Survey    | Site Conditions                               | Permitted Biologist        | Assisting Biologists          |
|-------------------|-----------------------------------------------|----------------------------|-------------------------------|
| February 3, 2021  | 48°F–50°F; 10%–100% cloud cover; 0–3 mph wind | Heather Moine <sup>1</sup> | Laura Burris, Morgan Kennedy  |
| February 4, 2021  | 40°F–55°F; 10%–50% cloud cover; 0–3 mph wind  | Heather Moine              | Laura Burris, Morgan Kennedy  |
| February 5, 2021  | 54°F–63°F; 0%–10% cloud cover; 0 mph wind     | Heather Moine              | Laura Burris, Morgan Kennedy  |
| February 17, 2021 | 41°F–60°F; 0%–10% cloud cover; 1–15 mph wind  | Heather Moine              | Paul Keating, Adam Crawford   |
| February 18, 2021 | 39°F–61°F; 30%–90% cloud cover; 0–5 mph wind  | Heather Moine              | Morgan Kennedy, Adam Crawford |

**Table 15. Summary of Wet Season Survey Dates, Site Conditions, and Biologists Present**

| Date of Survey    | Site Conditions                             | Permitted Biologist | Assisting Biologists          |
|-------------------|---------------------------------------------|---------------------|-------------------------------|
| February 18, 2021 | 50°F–54°F; 100% cloud cover; 0–3 mph wind   | Heather Moine       | Morgan Kennedy, Paul Keating  |
| March 3, 2021     | 46°F–60°F; 100% cloud cover; 0–4 mph wind   | Heather Moine       | Anna Godinho, Paul Keating    |
| March 4, 2021     | 49°F–67°F; 0% cloud cover; 0–4 mph wind     | Heather Moine       | Anna Godinho, Paul Keating    |
| March 17, 2021    | 41°F–58°F; 90% cloud cover; 0–4 mph wind    | Heather Moine       | Adam Crawford, Naomi Serratos |
| March 18, 2021    | 47°F–59°F; 100% cloud cover; 0–3 mph wind   | Heather Moine       | Adam Crawford, Naomi Serratos |
| March 31, 2021    | 61°F–81°F; 0% cloud cover; 0–2 mph wind     | Heather Moine       | Adam Crawford                 |
| April 1, 2021     | 48°F–80°F; 0%–10% cloud cover; 0–3 mph wind | Heather Moine       | None                          |
| April 14, 2021    | 58°F–71°F; 0%–10% cloud cover; 0–4 mph wind | Heather Moine       | Adam Crawford                 |
| April 15, 2021    | 63°F–73°F; 0% cloud cover; 0–5 mph wind     | Heather Moine       | Adam Crawford, Allie Sennett  |
| April 28, 2021    | 52°F–83°F; 0% cloud cover; 0–4 mph wind     | Heather Moine       | Allie Sennett, Sarah Foster   |

**Note:**

<sup>1</sup> Heather Moine (TE-60147A-1).

#### 4.5.3.17 American Badger (*Taxidea taxus*)

American badger (*Taxidea taxus*) is a state SSC and SSHCP Covered Species with a high potential to occur on the solar development area. This species is most abundant in drier open stages of most shrub and forest habitat, as well as open herbaceous habitats, including grasslands, meadows, and savannahs. Suitable habitat for American badger typically contains loose soils for denning and hunting, ample prey, and uncultivated land. American badgers are elusive, nocturnal mammals with expansive home ranges (CDFW 2022).

Although American badger has not been documented in the PSA, a collapsed burrow with badger sign (i.e., claw marks along both sides of entrance) was documented in the northern portion of the PSA. In addition, this species is known to occur in the vicinity and suitable habitat, as well as SSHCP modeled habitat, is present (Sacramento County 2018). There are known occurrences for American badger within 5 miles of the PSA, with one located 0.40 miles east of Sunrise Boulevard in southeast Rancho Cordova (CDFW 2022; USFWS 2022).



### 4.5.3.18 Other Special-Status Wildlife

#### Insects

In addition to the insects detailed above, the aquatic resource features within the PSA provide marginal suitable habitat for aquatic insects including hairy water flea (*Dumontia oregonensis*) and Ricksecker's water scavenger beetle (*Hydrochara rickseckeri*). Hairy water flea, a special-status insect species within a low potential to occur in the PSA, and Ricksecker's water scavenger beetle, a special-status and SSHCP Covered Species with a moderate potential to occur in the PSA, are exclusively associated with vernal pools and seasonal wetlands that contain water in winter and early spring and are dry in summer. These species do not discriminate between small or large vernal pools, vernal swales, or constructed vernal pools, but appears to favor aquatic habitat that is neutral to slightly alkaline, clear, and low in dissolved salts. In addition, they prefer habitat dominated by hydrophytic plants (Sacramento County 2018). Hairy water flea and Ricksecker's water scavenger beetle and their potential to occur in the PSA can also be referenced in Appendix D

#### Invertebrates

In addition to the invertebrate detailed above, the aquatic resource features in the PSA provide low quality to suitable habitat for invertebrate species including California Linderiella (*Linderiella occidentalis*) and mid-valley Fairy Shrimp (*Branchinecta mesoamericana*). California linderiella is special-status species with known occurrences within the PSA, and Mid-valley fairy shrimp is a special-status and SSHCP Covered species within a high potential to occur within the PSA. These species are known to occupy primarily in vernal pools and seasonally ponded areas within vernal swales. Aquatic habitat is typically mud or grass-bottomed with clear or tea-colored water (Sacramento County 2018). California linderiella and mid-valley fairy shrimp and their potential to occur in the PSA can also be referenced in Appendix D

#### Native Bats

Trees and structures in or adjacent to the PSA provide roosting habitat for native bats protected by the CFGC. Specifically, trees with exfoliating bark, crevices, and/or sufficient foliage and barns (or similar structures) in the PSA provide potential bat roosting habitat. Roosting habitat in the PSA is limited to trees along the Cosumnes River and isolated trees near seasonal ponds or other aquatic habitat that provide nearby foraging opportunities. No active bat roosts or signs of occupation, such as guano or staining, were detected during the reconnaissance-level field surveys.

#### Nesting Raptors and Migratory Birds

In addition to the special-status birds discussed above, the PSA provides nesting habitat for several other special-status local nesting and migratory bird species including black Tern (*Chelidonias niger*), great blue heron (*Ardea Herodias*), great egret (*Ardea alba*), Lawrence's Goldfinch (*Spinus lawrencei*), long-eared owl (*Asio otus*), Nuttall's Woodpecker (*Picoides nuttallii*), and yellow-billed magpie (*Pica nuttallii*). Native birds of prey are protected by CFGC Section 3503.5 and migratory bird species are protected by the federal MBTA. Although no active nests were detected during the field surveys, many common migratory birds and raptors were recorded (Appendix B). The nesting raptor and migratory bird species and their potential to occur in the PSA can also be referenced in Appendix D.

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# 5 Summary of Solar Development Area Resources

In the summary of findings section below, the results provided in Section 4 have been further summarized to be explicit to the solar development area of the PSA (i.e., excluding the other adjacent lands within the PSA).

Representative photographs of resource findings can be referenced in Appendix E, Photo Record.

## 5.1 Soil and Terrain

A total of 11 soil units were mapped in the solar development area, of which seven are listed as partially hydric soils. Hydric soils are defined by the National Technical Committee for Hydric Soils as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (USDA 2021). Soils encountered during the field surveys were generally classified as clay to clay loam soils (Table 2; Figure 3).

## 5.2 Hydrology and Aquatic Resources

The solar development area occurs within the Upper Cosumnes River watershed. The western half of the solar development area is located within the Federal Emergency Management Agency National Flood Hazard Layer 1% 100-year floodplain of the Cosumnes River (FEMA 2021).

During the ARD conducted for the Project, eight aquatic resource types were documented within the solar development area including ditch, ephemeral drainage, intermittent drainage, seasonal wetland, seasonal wetland swale, pond, upland swale, and vernal pool (Figure 4 and Figure 5) (SLLC 2022).

Aquatic resources delineated within the solar development area have the potential to be waters of the U.S. and/or waters of the state based on an analysis of the three parameters (i.e., soils, hydrology, and vegetation) and if they have a significant nexus to known waters of the U.S. and waters of the state and/or exhibit relative permanence. A preliminary jurisdictional assessment of aquatic resources known to occur in the solar development area was completed to evaluate total acreages and linear feet of resources for each known regulatory authority that may require compliance (i.e., permitting). The preliminary jurisdictional assessment identifies all 5.85 acres (9,260.86 linear feet) of aquatic resources within the solar development area of the PSA as Waters of the U.S. and waters of the state, meeting the criteria of waters of the United States pursuant to regulations in Section 404 of the CWA and waters of the state pursuant to Sections 1600 through 1603 of the California FGC, and the RWQCB, pursuant to CWA Section 401 and the Porter-Cologne Act (Table 16, Preliminary Summary of Jurisdictional Waters of the U.S. and Waters of the State within the Project Solar Development Area) (SLLC 2022).

**Table 16. Preliminary Summary of Jurisdictional Waters of the U.S. and Waters of the State with the Project Solar Development Area<sup>1</sup>**

| Feature Type                      | Total Acreage | Total Linear Feet |
|-----------------------------------|---------------|-------------------|
| <b>Wetlands</b>                   |               |                   |
| Pond                              | 0.37          | —                 |
| Seasonal Wetland                  | 3.10          | —                 |
| Vernal Pool                       | 0.25          | —                 |
| <i>Total Wetlands</i>             | 3.72          | —                 |
| <b>Non-Wetlands Waters (NWWs)</b> |               |                   |
| Ditch                             | 0.15          | 720.26            |
| Ephemeral Drainage                | 0.74          | 2,439.08          |
| Intermittent Drainage             | 0.46          | 1,303.60          |
| Seasonal Wetland Swale            | 0.70          | 3,874.33          |
| Upland Swale                      | 0.08          | 923.59            |
| <i>Total NWWs</i>                 | 2.13          | 9,260.86          |
| <b>Total</b>                      | <b>5.85</b>   | <b>9,260.86</b>   |

Source: SSSLC 2022.

## 5.3 Vegetation Communities and Land Cover Types

Vegetation communities and land cover types were documented within the solar development area and mapped using the vegetation community and land cover data in the SSHCP (Table 5; Figure 6) (Sacramento County 2018). Vegetation and land cover within the solar development area includes California annual grassland (357.61 acres), low density development (6.84 acres), and urban (1.96 acres).

## 5.4 Sensitive Natural Communities

No CDFW sensitive natural communities were identified within the solar development area (Figure 7).

Vernal pool habitat is present within the solar development area (Figure 5).

## 5.5 Designated Critical Habitat/Essential Fish Habitat

No USFWS DCH or National Oceanic and Atmospheric Administration EFH was identified within the solar development area (Figure 7) (USFWS 2022).

## 5.6 Special-Status Plant Species

A total of 19 special-status plant species that have known occurrences either within the nine USGS 7.5-Minute Quads and/or within 5 miles of the PSA were identified (CDFW 2022; CNPS 2022). Of these 16, 12 species have a low to moderate potential to occur in the PSA, and of these, nine are Covered Species under the SSHCP. The



remaining seven special-status plant species were removed from further consideration due to lack of suitable habitat within the solar development area, no known occurrences within 5 miles of the PSA, and/or because the PSA is outside of the species' known geographic or elevation range. No special-status plant species were observed during protocol-level botanical field surveys. Species with the potential to occur within the solar development area of the PSA are summarized below.

### Moderate potential for occurrence within the PSA

- Boggs Lake hedge-hyssop—No federal status, moderately threatened in California, SSHCP Covered Species
- Dwarf downingia—No federal status, moderately threatened in California, more common elsewhere, SSHCP Covered Species
- Legenere—No federal status, seriously threatened in California, more common elsewhere, SSHCP Covered Species
- Pincushion navarretia—No federal status, seriously threatened in California, more common elsewhere
- Sacramento Orcutt grass—Federally endangered, state endangered, seriously threatened in California, SSHCP Covered Species
- Slender Orcutt grass—Federally endangered, state endangered, seriously threatened in California, SSHCP Covered Species
- Valley brodiaea—No federal status, moderately threatened in California, not covered under SSHCP
- Hoary navarretia—No federal status, not very threatened in California, SSHCP Covered Species

### Low Potential for Occurrence within the PSA

- Ahart's dwarf rush—No federal status, moderately threatened in California, SSHCP Covered Species
- Hogwallow starfish—No federal status, limited distribution in California, not covered under SSHCP
- Sanford's arrowhead—No federal status, moderately threatened in California, SSHCP Covered Species
- Tuolumne button-celery—No federal status, moderately threatened in California, not covered under SSHCP

## 5.6.1 Protocol-Level Botanical Survey Summary

Dudek conducted protocol-level botanical surveys in May 2021 within the solar development area. No special-status plant species were observed in the solar development area during the protocol-level surveys conducted.

## 5.6.2 Arborist Survey and Tree Inventory

International Society of Arboriculture Certified arborists with California Tree and Landscaping Consulting Inc. conducted an arborist survey and tree inventory of trees that could potentially be protected by the Sacramento County Tree Preservation Ordinance. Twenty-two trees were inventoried and 19 could be directly impacted by Project activities, as they reside within the solar development area. Since none of the 19 trees are protected, no trees need a permit for removal within the solar development area. The remaining three trees are not expected to be impacted by Project activities.

## 5.7 Special-Status Wildlife Species

A total of 37 special-status wildlife species have known occurrences either within the nine USGS 7.5-Minute Quads or within 5 miles of the PSA. Of these 37 special-status wildlife species, 28 have a low to high potential to occur in the solar development area and/or are known to occur in the solar development area, and of these, 14 are Covered Species under the SSHCP (Sacramento County 2018). In addition, the solar development area provides suitable habitat for nesting birds protected by the federal MBTA and CFGC and native bats protected by the CFGC. The remaining three special-status wildlife species were removed from further consideration due to lack of suitable habitat within or adjacent to the PSA, no known occurrences within 5 miles of the PSA, and/or because the PSA is outside of the species' known geographic range. Special-status wildlife species including bald eagle, BUOW, SWHA, TRBL, white-tailed kite, great egret, great blue heron, yellow-billed magpie, and California linderiella were observed during field studies. Species with the potential to occur within the solar development area of the PSA are summarized below.

### Known to Occur within the PSA

- Bald eagle—Federal BCC, state endangered, not covered under the SSHCP
- BUOW—Federal BCC, no state status, not covered under the SSHCP
- California linderiella—No federal status, state SSC, not covered under the SSHCP
- Central Valley steelhead—Federally threatened, no state status, not covered under the SSHCP
- Great blue heron—Federal and state special-status species, not covered under the SSHCP
- Great egret—federal and state special-status species, not covered under the SSHCP
- SWHA—Federal BCC, state threatened, SSHCP Covered Species
- TRBL—Federal BCC, state threatened and SSC, SSHCP Covered Species
- VELB—Federally threatened, no state status, SSHCP Covered Species
- Vernal pool tadpole shrimp—Federally endangered, no state status, SSHCP Covered Species

- White-tailed kite—No federal status, state fully protected, SSHCP Covered Species
- Yellow-billed magpie—Federal BCC, no state status, not covered under the SSHCP

#### High Potential for Occurrence within the PSA

- American badger—No federal status, state SSC, not covered under the SSHCP
- Mid-valley fairy shrimp—No federal status, no state status, SSHCP Covered Species

#### Moderate Potential for Occurrence within the PSA

- Bank swallow—No federal status, state threatened, not covered under the SSHCP
- Long-eared owl—federal and state special-status species, not covered under the SSHCP
- Northwestern pond turtle—No federal status, State SSC, SSHCP Covered Species
- Ricksecker’s water scavenger beetle—No federal status, no state status, SSHCP Cover Species
- WST—No federal status, state SSC, SSHCP Covered Species

#### Low Potential for Occurrence within the PSA

- Black tern—Federal BCC, state SSC, not covered under the SSHCP
- CTS—Federally threatened, state threatened and on state watchlist, SSHCP Covered Species
- Common yellowthroat—Federal BCC, state SSC, not covered under the SSHCP
- Golden eagle—Federally protected and BCC, state watchlist, not covered under the SSHCP
- Giant garter snake—Federally threatened, state threatened, SSHCP Covered Species
- Hairy water flea—Federal and state special-status species, not covered under the SSHCP
- Lawrence’s goldfinch—Federal BCC, no state status, not covered under the SSHCP
- Nuttall’s woodpecker—Federal BCC, no state status, not covered under the SSHCP
- Vernal pool fairy shrimp—Federally threatened, no state status, SSHCP Covered Species

## 5.7.1 Protocol-Level and Focused Wildlife Survey Summary

### 5.7.1.1 California Tiger Salamander

During the database and literature evaluation, the nearest CTS occurrences was determined to be approximately 5 miles from the solar development area, beyond the dispersal distance known for the species. Evaluation of potential aquatic habitat within the vicinity of the solar development area identified some features that could potentially provide aquatic habitat for the species, but they were generally toward the edges of the dispersal distance or blocked by partial or complete barriers to movement. During the aquatic larval surveys, no CTS or their larvae were observed within the solar development area, and a low number of burrows suitable for CTS were identified within the upland areas of the solar development area.

### 5.7.1.2 Western Spadefoot Toad

There is suitable habitat for WST within the solar development area. During database and literature evaluation, WST were identified within 5 miles of the PSA. During CTS aquatic larval surveys and wet season large listed branchiopod surveys, WST were not identified within the solar development area.

### 5.7.1.3 Burrowing Owl

There is suitable habitat for BUOW in the solar development area, as well as recorded known occurrences. Protocol-level BUOW surveys were conducted from February through May 2021, and June through July 2022, within the solar development area. These surveys identified two visual detections of BUOW individuals, and several potential burrow locations based on presence of sign such as pellets, whitewash, etc.

### 5.7.1.4 Swainson's Hawk

There is suitable habitat for foraging for SWHA within the solar development area. There are known occurrences of SWHA within the PSA. conducted protocol-level SWHA surveys within the PSA, and visual surveys up to 0.5 miles outside of the solar development area, from February through June 2021, and June through July 2022. These surveys identified multiple SWHA individuals foraging, perching, and displaying courtship behavior within and/or adjacent to the solar development area.

### 5.7.1.5 Tricolored Blackbird

There is suitable habitat for foraging for TRBL within the solar development area. Nesting habitat is generally absent from the solar development area; however, potential nesting habitat is present just outside the solar development area within the western PSA near the Cosumnes River. There are several known occurrences of TRBL within 5 miles of the PSA and record known occurrences within the PSA in the adjacent other lands. Dudek conducted focused TRBL surveys within the PSA from February through May 2021. A total of six TRBL species observations, including foraging, were observed during the four survey passes conducted in 2021. No nesting colonies were observed.



### 5.7.1.6 Valley Elderberry Longhorn Beetle

Habitat suitable for VELB has been identified within 165 feet of the solar development area, specifically within upland areas. The black elderberries within the 165 feet of the solar development area were surveyed in February 2021 for signs of VELB. One surveyed location of elderberry shrubs identified relict bore holes present on older branches, but none present on new growth.

### 5.7.1.7 Large-Listed Branchiopods

During the database and literature evaluation, vernal pool fairy shrimp were identified within 5 miles of the solar development area and vernal pool tadpole shrimp were identified as having known recorded occurrences within the solar development area (Sacramento County 2018). Vernal pool fairy shrimp and vernal pool tadpole shrimp were not observed in the Project during protocol-level dry season and wet season surveys, and there are no recorded occurrences of these species on the site in agency databases. Suitable habitat is present in the solar development area for both branchiopod species.

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# 6 Resources Impact Assessment of the Solar Development Area

This section addresses impacts to biological and aquatic resources that have the potential to be affected by the implementation of the Project and provides preliminary analysis of impacts, as well as recommendations to avoid and minimize potential impacts. For this final BTR, this assessment explicitly addresses only the impacts to resources occurring within the solar development area (371.72 acres) of the PSA (i.e., not the adjacent other lands).

## 6.1 Definition of Impact Types

### 6.1.1 Direct Permanent Impacts

Direct permanent impacts refer to the permanent physical loss of a biological and aquatic resource typically due to clearing and grading associated with implementation of a project. Direct permanent impacts are analyzed in four ways: (1) permanent loss of vegetation communities and natural land cover types (excluding anthropogenic/disturbed land covers), as well as general wildlife and their habitat; (2) permanent loss of or harm to individuals of special-status plant and wildlife species; (3) permanent loss of suitable and/or occupied habitat for special-status species; and/or (4) permanent loss of wildlife movement and habitat connectivity in the Project vicinity.

### 6.1.2 Temporary Impacts

Temporary impacts refer to a temporary loss of biological and aquatic resources typically due to clearing and grading associated with implementation of the Project. Temporary impacts generally occur for a brief period (e.g., up to approximately 1 year) and would normally be reversible (e.g., temporary removal of vegetation after which no permanent impacts would occur).

### 6.1.3 Indirect impacts

Indirect impacts are reasonably foreseeable effects of Project implementation on remaining or adjacent biological and aquatic resources outside the direct disturbance zone that may occur during typical grading or maintenance activities (i.e., short-term construction-related indirect impacts) or later in time as a result of the Project (i.e., long-term, or operational, indirect impacts). Short-term indirect impacts can include dust, human activity, pollutants (e.g., potential erosion), and noise that extend beyond the identified construction area. Long-term indirect impacts can include changes to hydrology, introduction of invasive species, dust, and noise that are operations related or persist after construction is complete.

### 6.1.4 Design to Avoid Resource Impacts

The Project has the potential to influence both biological and aquatic resources. The Project assessed a PSA of 732.26 acres to allow for flexibility in the solar development design to avoid biological and aquatic resources to the

maximum extent possible. As such, the Project is designed in such a manner that impacts to resources will be avoided and reduced to the extent feasible.

### 6.1.5 Avoidance, Minimization, and Mitigation

The significance criteria used to evaluate impacts to biological and aquatic resources is based on CEQA Guidelines, as well as federal, state, and local regulatory guidance pertaining to potential jurisdictional resources and features occurring only within the solar development area of the PSA. Suggested AMMs and MMs include those measures that would avoid, minimize, or otherwise mitigate potential impacts to biological and aquatic resources. Based on the results in this final BTR, preliminary AMMs and MMs have been provided where applicable in the resource impact assessment sections below.

## 6.2 Preliminary Analysis of Impacts

A preliminary analysis of impacts to biological (and aquatic) resources, consistent with the Sacramento County thresholds of significance and those included in CEQA Appendix G (14 CCR 15000 et seq.), has been provided below (Table 17).

**Table 17. Preliminary Resource Impact Analysis Checklist for the Solar Development Area within the Solar Development Area**

|                                                                                                                                                                                                                                                                                                                  | Potentially Significant Impact | Less Than Significant Impact with Mitigation Incorporated | Less Than Significant Impact | No Impact                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------------|------------------------------|--------------------------|
| <b>BIOLOGICAL RESOURCES – Would the Project:</b>                                                                                                                                                                                                                                                                 |                                |                                                           |                              |                          |
| a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | <input type="checkbox"/>       | <input checked="" type="checkbox"/>                       | <input type="checkbox"/>     | <input type="checkbox"/> |
| b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?                                                              | <input type="checkbox"/>       | <input checked="" type="checkbox"/>                       | <input type="checkbox"/>     | <input type="checkbox"/> |
| c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?                                                                                     | <input type="checkbox"/>       | <input checked="" type="checkbox"/>                       | <input type="checkbox"/>     | <input type="checkbox"/> |

**Table 17. Preliminary Resource Impact Analysis Checklist for the Solar Development Area within the Solar Development Area**

|                                                                                                                                                                                                                                    | Potentially Significant Impact | Less Than Significant Impact with Mitigation Incorporated | Less Than Significant Impact        | No Impact                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------------|-------------------------------------|-------------------------------------|
| d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? | <input type="checkbox"/>       | <input type="checkbox"/>                                  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?                                                                                                | <input type="checkbox"/>       | <input type="checkbox"/>                                  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?                                               | <input type="checkbox"/>       | <input type="checkbox"/>                                  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

Source:14 CCR 15000 et seq.

a) ***The Project would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW and or USFWS.***

A total of 12 special-status plant species and 28 special-status wildlife species are known to occur in the PSA or have a low, moderate, or high potential to occur in the PSA and could therefore be impacted by eventual Project implementation. Species-specific impacts and recommended avoidance measures for species with known occurrences or a high to moderate potential to occur as well as federal and state status are included below.

a.1 Special-Status Plant Species

There are eight special-status plant species have a moderate potential to occur within the PSA, including Boggs Lake hedge-hyssop, dwarf downingia, hoary navarretia, legenera, pincushion navarretia, Sacramento Orcutt grass, slender Orcutt grass, and valley brodiaea. Suitable habitat for these species includes valley grasslands and several types of aquatic resources (e.g., vernal pools, pond and lake margins, mesic areas), like those identified within the solar development area.

Of these eight special-status species with a moderate potential to occur in the PSA, only Sacramento Orcutt grass and slender Orcutt are federally, and state listed. Of the remaining six special-status plant species with a moderate potential to occur, only four are state listed and/or have a CNPS CRPR rank of 1 or 2, including Boggs Lake hedge hyssop, Dwarf downingia, legenera, and pincushion navarretia. Special-status



plant resources may be subject to agency jurisdiction pursuant to regulations under FESA, CESA, CFGC, CEQA Guidelines, and the Sacramento County General Plan.

To assist the Project design in understanding areas to avoid, specifically in regard to botanical resources, Dudek conducted reference population checks for special-status plant species on April 22, 2021, and conducted protocol-level botanical field surveys within the PSA, including the solar development area, during the appropriate floristic period, on May 4, 2021, in accordance with the *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants* (USFWS 2000), the *Protocol for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018), and the *Botanical Survey Guidelines* (CNPS 2001). Due to the early dry season in the 2021 rain year, many species did not bloom due to inadequate inundation in suitable habitat resources (e.g., wetlands, vernal pools, etc.). No special-status plant species were observed. Note that negative survey results during one field season does not constitute evidence that a plant occurrence is absent from a location (CDFW 2018).

If eventual Project implementation were to cause reduction and/or damage to special-status plant species and/or existing habitat that supports special-status plant species, then it would be considered a significant impact under CEQA.

To reduce impacts to special-status plant species and habitat to ***less than significant with mitigation incorporated***, the measures below are recommended.

**Recommended Avoidance and Minimization Measures.** The following measures are recommended to avoid, minimize, and mitigate direct or indirect impacts to special-status plant species:

- A Worker Environmental Awareness Program (WEAP) should be prepared that will educate staff on the presence of all special-status plant species, sensitive natural communities, and protected wetlands with potential to occur, or that are known to occur, within the solar development area. The program should describe their identification, habitat requirements, and penalties for species impacts, as well as immediate steps to take should special-status plant species be observed by staff on site. This WEAP should include biological resource AMMs from the Project's CEQA Mitigation Monitoring and Reporting Program, resource permits or agreements, and any species-specific plans. The WEAP can be provided in the form of a handout and/or video presentation. Staff that attend the training should fill out a sign-in sheet indicating that they completed the training.
- Protocol-level botanical surveys shall be conducted by a qualified botanist a maximum of 2 weeks prior to Project activity initiation, in accordance with CDFW and CNPS guidelines.
- If no special-status species are observed, then no further AMMs or mitigation is required.
- If special-status plant species are observed, then the following measures are additionally recommended to avoid the species:
  - Special-status plant species should be mapped and flagged within the solar development area.

- Project activities should be modified to avoid impact.
- Environmentally sensitive area fencing, and appropriate signage should be installed at a minimum of 20 feet from the edge of special-status plant populations. The Project should avoid performing any construction related activities within the environmentally sensitive area.
- If full avoidance is not feasible, the applicant should prepare and implement a Botanical Mitigation Plan. The plan will include specifications for transplantation, including requirements for transplant destinations, methods to minimize damage of plants during transplantation, and irrigation or other treatments required to improve chance of transplantation success. The plan would also include monitoring requirements to demonstrate transplantation success and no net loss of special-status plant species. If monitoring demonstrates transplantation is not fully successful in achieving no net loss, compensatory mitigation would be required. The mitigation ratios would vary depending on the level of transplantation success but would ensure no net loss of special-status plant species from direct permanent, indirect, and/or temporary Project impacts.

#### a.2 California Tiger Salamander

CTS is a federally and state threatened species and an SSHCP Covered Species. CTS has not been documented in the solar development area. The nearest known occurrence of the species is approximately 5 miles south of the solar development area (CDFW 2022; USFWS 2021a). CTS are subject to agency jurisdiction pursuant to regulations under FESA, CESA, CFGC, and CEQA Guidelines.

Dudek conducted CTS aquatic larval surveys within potential suitable aquatic habitat within the solar development area and other areas of the PSA in accordance with the *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or Negative Findings of California Tiger Salamander* (USFWS 2003). Aquatic larval surveys were conducted on March 16, April 15, and April 28, 2021, and no CTS larvae were observed. Aquatic resources within the solar development area were found to lack required habitat characteristics for CTS. Note that negative survey findings (i.e., no presence), especially from a single season of larval surveys, does not demonstrate species absence. However, assessment of aquatic resources within 2 kilometers of the solar development area (i.e., the maximum reasonable dispersal distance for CTS) indicated that most aquatic features in the vicinity lack the appropriate hydro-period or show evidence of occupancy by game fish (e.g., fishing docks). The ponds within the 2 kilometer buffer that could not be eliminated as potential CTS aquatic habitat were generally blocked from dispersal to and from the solar development area by partial or complete barriers to movement. The potential upland habitat within the PSA, specifically the solar development area, does contain small mammal burrows in some areas, but substantial portions of the solar development area lack burrows entirely or have low burrow densities. This potential upland CTS habitat is not unique or high quality as compared to similar resources in the vicinity.

To reduce impacts to CTS and habitat to ***less than significant with mitigation incorporated***, the measures below are recommended.

**Recommended Avoidance, and Minimization Measures.** The following measures are recommended to avoid and minimize direct or indirect impacts to this species:

- Project ground-disturbing activities within CTS suitable habitat will occur outside of the breeding and dispersal season (after July 31 and before October 15), to the extent feasible. If Project activities must be implemented during the breeding and dispersal season, they will not start until 30 minutes after sunrise and must be completed 30 minutes prior to sunset.
- A biologist with CTS knowledge and experience will conduct a pre-construction survey and monitor Project activities within CTS suitable habitat.
- If a CTS is encountered during Project activities, the approved biologist will notify CDFW and USFWS immediately. Project activities will cease within a 100-foot radius of the animal until the animal is relocated by an approved biologist with appropriate handling permits. Prior to relocation, the approved biologist will notify CDFW and USFWS to determine the appropriate procedures related to relocation. If the animal is handled, a report will be submitted within 1 business day to CDFW and USFWS.
- The Project will prepare a CTS Relocation Plan for Project activities occurring in CTS suitable habitat. The CTS Relocation Plan will achieve no net reduction in CTS or CTS suitable habitat within the PSA. The CTS Relocation Plan will include the name(s) of the approved biologist(s) who will relocate CTS; pre-construction habitat assessment methodology; measures to minimize temporary impacts to CTS suitable habitat; capture, handling, and relocation methods; a map and description of the relocation area(s) for captured CTS, including relative location, quality of habitat, non-native species or the potential for CTS-barred tiger salamander hybrids to be present, identified upland burrows determined to be suitable for CTS placement, distance to aquatic habitat, and potential barriers for movement; written permission from the landowner to use their land as a relocation site; and identification of a wildlife rehabilitation center or veterinary facility that routinely evaluates or treats amphibians. The Project permittee will submit the CTS Relocation Plan to CDFW for written approval at least 15 days prior to the beginning of any Project activities, including pre-construction surveys.

### a.3 Western Spadefoot Toad

WST is a state SSC and SSHCP Covered Species with a moderate potential to occur in the solar development area. Vernal pools, seasonal wetlands swales, and other aquatic resources in the solar development area provide habitat for WST. Development could impact WST if this species is present within the solar development area prior to ground-disturbing activities. To assist the Project design in understanding areas to avoid, Dudek conducted focused WST surveys within potential suitable habitat for this species. The surveys were completed in conjunction with the CTS and large listed branchiopod surveys between February and April 2021. No WST or their larval masses were observed during focused surveys. Although WST has not been documented in the solar development area, there are known occurrences of the species within 5 miles. Direct or indirect impacts to this species would likely be considered a potentially significant impact under CEQA. To reduce impacts to WST and habitat to ***less than significant with mitigation incorporated***, the measures below are recommended.

**Recommended Avoidance, and Minimization Measures.** The following measures are recommended to avoid and minimize direct or indirect impacts to this species:

- Project ground-disturbing activities within western spadefoot suitable habitat should occur outside the breeding and dispersal season (after May 15 and before October 15). If it is determined necessary for ground-disturbing activities that occur within the breeding season. The Project shall enlist biologists with valid collecting permits to perform a pre-construction survey for WST within suitable habitat, including breeding habitat. If WST are encountered during the survey, individuals will be safely relocated to suitable habitat outside of the solar development area. The survey should include searches for small mammal burrows, crevices, and other potential refugia, as well as dip-netting or seining suitable breeding habitat. Additionally, if WST is observed within the solar development area, adult and larval WST and egg masses should be collected and relocated to suitable habitat (i.e., to be preserved in perpetuity).
- WST should be hand-captured and relocated outside the construction area to suitable habitat by a biologist with a valid collecting permit or with proper agency authorization as determined during coordination with CDFW. All relocation areas should be identified and approved by CDFW prior to the pre-construction survey. Relocated WST should be monitored until they have escaped into upland refugia or aquatic habitat with sufficient water. Project construction activities will be suspended in a 100-foot radius of the WST until the WST leaves the solar development area on its own or is relocated by a CDFW approved biologist.
- If Project ground-disturbing activities must commence in suitable WST habitat during the breeding and dispersal season, exclusion fencing will be installed around the Project footprint and must be monitored by an approved biologist following rain events. Temporary high-visibility construction fencing will be installed along the edge of work areas, and silt fencing will be installed immediately behind the temporary high-visibility construction fencing to exclude WST from entering the construction area. Fencing will remain in place until all construction activities within the construction area are completed.
- At the end of each working day, open trenches and holes must be covered or installed with wildlife ramps to avoid wildlife entrapment overnight.
- If WST are determined to be present within the solar development area, then ongoing monitoring by a qualified biologist is required to ensure there are no impacts to this species and its habitat during construction and operation and maintenance activities for the Project.
- This species should be included in the WEAP described above for special-status plant species and should also educate staff on the presence of special-status wildlife species and ways to avoid and minimize impacts.

#### a.4 Central Valley Steelhead Distinct Population Segment

Central Valley steelhead DPS is a federally threatened species. The Cosumnes River in the western portion of the PSA is known to support the Central Valley steelhead DPS and is designated as EFH for this species. No EFH is present in the solar development area of the PSA. As a federally listed species, impacts to this steelhead DPS would be considered take under FESA and a significant impact under CEQA.



Direct and indirect impacts to the Cosumnes River would be avoided and there would be **no impact** to Central Valley Steelhead DPS.

#### a.5 Northwestern Pond Turtle

Northwestern pond turtle is a state SSC and SSHCP Covered Species with a moderate potential to occur in upland habitat within the solar development area. The Cosumnes River in the northern portion of the PSA provides aquatic habitat for northwestern pond turtle. Development in the solar development area of the PSA could impact this species if upland nesting or aestivation sites or individual turtles are present within the construction footprint during ground disturbance. Although no northwestern pond turtles have been documented in the solar development area, this species is known to occur within 5 miles. Direct or indirect impacts to this species would likely be considered a potentially significant impact under CEQA.

To reduce impacts to northwestern pond turtle and habitat to **less than significant with mitigation incorporated**, the measures below are recommended.

**Recommended Avoidance and Minimization Measures.** The following measures are recommended to avoid and minimize direct or indirect impacts to this species:

- Project ground-disturbing activities will be conducted outside of northwestern pond turtle's active season (after May 1 and before September 15), to the extent feasible. If Project activities must be implemented during the breeding and dispersal season, they will not start until 30 minutes after sunrise and must be completed 30 minutes prior to sunset.
- A qualified biologist should conduct a pre-construction survey for northwestern pond turtle within 48 hours prior to the start of construction activities within 300 feet of suitable habitat (e.g., any adjacent riparian woodland). Concurrently with the pre-construction survey, searches for nesting sites should be conducted and any identified sites should be delineated with high-visibility flagging or fencing and avoided during construction activities. If avoidance is not possible, the nest and/or turtle should be removed by a qualified biologist and relocated to an appropriate location.
- If turtles and/or nests are encountered during the pre-construction survey, a qualified biologist should be present during grubbing and clearing activities in suitable habitat (aquatic) to monitor for northwestern pond turtle. If a turtle is observed in the active construction zone, construction should cease within a 100-foot buffer, and a qualified biologist will be notified. Construction may resume when the biologist has either hand-captured and relocated the turtle to nearby suitable habitat outside the construction zone, or, after thorough inspection, determined that the turtle has moved away from the construction zone.
- On-site personnel will observe a 20-mile-per-hour speed limit within northwestern pond turtle suitable habitat.
- This species should be included in the WEAP described above for special-status plant species that will also educate staff on the presence of special-status wildlife species and ways to avoid and minimize impacts.

### a.6 Burrowing Owl

BUOW is an SSC and an SSHCP Covered Species. There is suitable habitat for BUOW in the PSA, as well as recorded presence. Protocol-level and visual BUOW surveys were conducted from February through May 2021, and June and July 2022, within the PSA. The surveys covered the entirety of the PSA, including the solar development area, as well as suitable nesting habitat within 500 feet. Within the solar development area, these surveys identified two visual detections of BUOW individuals, and 16 potential burrow locations (i.e., of single and/or multiple burrows) based on presence of signs such as pellets, whitewash, etc. BUOW is a federal BCC and a state SSC. Open areas in the solar development area (i.e., grassland and cultivated land) provide foraging and nesting habitat for BUOW. Impacts to this species would likely be considered a potentially significant impact under CEQA and may be considered take under the MBTA.

To reduce impacts to BUOW and habitat to ***less than significant with mitigation incorporated***, the measures below are recommended.

**Recommended Avoidance, and Minimization Measures.** The following measures are recommended to avoid, minimize, and mitigate direct or indirect impacts to this species:

- A qualified biologist should conduct surveys for BUOW within 30 days prior to ground-disturbing activities within suitable habitat for the species. The survey should cover the limits of ground disturbance and potentially suitable nesting habitat within 500 feet. If ground-disturbing activities are delayed, then additional surveys should be conducted such that no more than 7 days elapse between the survey and ground-disturbing activities.
- If BUOW is encountered during the pre-construction survey, the approved biologist should prepare a Special-Status Species Avoidance, Minimization, and Relocation Plan for special-status species occurring in the solar development area, including BUOW. The Avoidance, Minimization, and Relocation Plan shall include a performance standard of no net loss of BUOW within the PSA.
- If non-nesting BUOWs are observed in or adjacent to the construction footprint during the survey, construction should be postponed until the qualified biologist can fully implement a Burrowing Owl Passive Relocation and Exclusion Plan (to be prepared by the qualified biologist). The plan should be prepared in accordance with the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012). Once owls have been successfully excluded and unoccupied burrows evacuated, construction in the area may proceed.
- If nesting BUOWs are observed during the survey, construction activities within 300 feet of occupied burrows should be delayed until young owls have fledged and are independent of the burrow, as determined by a qualified biologist. The qualified biologist may reduce the 300-foot buffer based on the type, timing, extent, and intensity of the construction activity and other factors such as site topography and vegetation cover between the construction activity and the burrow. Once all young have fledged and are no longer dependent upon the nest burrow, the same burrow exclusion (i.e., environmentally sensitive area) procedure described above should be implemented prior to resuming construction activities in the area.

- If BUOW is determined present within the solar development area, then on-going monitoring by a qualified biologist may be required to ensure there are no impacts to this species and its habitat during construction and operation and maintenance activities for the Project.
- This species should be included in the WEAP described above for special-status plant species that will also educate staff on the presence of special-status wildlife species and ways to avoid and minimize impacts.
- Compensatory mitigation shall be provided for impacts to BUOW nesting, wintering, and/or foraging habitat by Project infrastructure to achieve a performance standard of no net loss of habitat value to the BUOW. The methods and implementation measures to achieve this performance standard shall be described in a mitigation plan to be submitted to the County of Sacramento for review prior to the start of construction.

#### a.7 Swainson's Hawk

SWHA is a federal BCC, a state threatened species, and an SSHCP Covered Species. No SWHA nests were observed in the solar development area, within the PSA, or within 0.5 miles of the solar development area. However, large trees in the riparian corridor of the PSA north of the solar development area and outside the PSA within 0.5 miles provide potential nesting habitat for SWHA, and open areas in the solar development area provide foraging habitat for this species.

Construction activities, including grading and grubbing, near suitable nesting habitat (e.g., individual trees or riparian woodland habitats) within the solar development area or within 0.5 miles of the PSA could disturb an active SWHA nest. SWHA were not observed nesting within the solar development area or within 0.5 miles of the PSA during protocol-level surveys conducted on February 18 and 25, 2021; March 4 and March 16, 2021; April 9 and 15, 2021; May 3, 2021; June 4, 2021, June 2 and 3, 2022, and July 7 and 9, 2022; however, a pair was observed over the solar development area exhibiting courting behavior, and a pair was observed outside the PSA (i.e., outside the solar development area) going to and from a potential nest site. It is expected that a few trees would be removed during Project construction, but these trees have not been found to support nesting SWHA. If trees within 0.5 miles of the solar development area become occupied by nesting SWHA prior to construction, then activities could result in the incidental loss of adults, juveniles, nestlings, or fertile eggs. In addition to the potential to remove a tree with an active nest, construction-generated disturbances also have the potential to indirectly affect SWHAs if the species is nesting within 0.5 miles of Project activities. Increased levels of noise and human activity within 0.5 miles of an active nest could result in nest abandonment or forced fledging and subsequent loss of fertile eggs, nestlings, or juveniles. These construction-generated disturbances could also cause SWHA to temporarily avoid foraging on some or all the solar development area.

Conversion of annual grassland to solar fields (i.e., disturbed habitat) could result in impacts on SWHA through permanent loss of foraging habitat. However, the annual grassland that composes most of the solar development area (357.61 acres of the 371.72-acre area) is abundant in the region. For example, within 5 miles of the solar development area, approximately 41,098 acres (61%) of the 66,539-acre area is annual grassland. Although there is a large amount of available foraging habitat for SWHAs in the Project vicinity (i.e., within 5 miles of the PSA), grassland conversion of the solar development area would decrease

available foraging habitat for locally nesting SWHAs. Depending on the intensity of SWHA use of the affected foraging habitat, this decrease could result in displacement of nesting pairs, reduction in reproductive potential, or decreased survival rates, particularly for hawks nesting within 0.5 miles of the solar development area. However, SWHA foraging within the solar development area was not intensive during surveys conducted in 2021 and 2022. During seven survey passes conducted from February to June 2021, and June to July 2022, SWHA foraging behavior was observed within the PSA three times, and SWHA was observed seven other times in the PSA in non-foraging behavior such as perching, courtship flight, and transiting flight. Due to the dry conditions present in 2021 and 2022, foraging intensity on the solar development area may have been suppressed due to lower prey availability or reduced SWHA breeding.

The results of studies conducted by Estep Environmental Consulting (i.e., 2013 and preliminary 2021-2022 findings) indicate that properly designed and managed solar arrays can provide suitable SWHA foraging habitat. As noted in Section 4.5.3.11, solar arrays will be spaced to allow for foraging by SWHA between array rows. The Project photovoltaic modules (i.e., contiguous part of array string in one area) would cover approximately 78.75 acres of annual grassland, and the overall photovoltaic area would cover 213.50 acres within the 371.72 acres of the solar development area. Therefore, approximately 144.11 acres (40%) of the annual grasslands within the solar development area is expected to remain available for SWHA foraging upon Project completion.

The solar arrays are proposed to be approximately 6 feet above ground level when at a level position (e.g., mid-day), though distances will vary depending on the panel tilt of 60 degrees to each side. Although the area under the solar arrays may limit restrict aerial foraging, it would still provide habitat for rodents and large insects that form the SWHA prey base. Studies indicate that SWHA forage within solar projects. SWHA may also pursue prey under the panels by hopping short distances, especially when the tracking panels are tilted in early morning and late afternoon to better expose the area on each side of the post. SWHA would also likely perch on the solar arrays, potentially enhancing their foraging efficiency within the remaining foraging habitat.

As a state-listed species, impacts to SWHA may be considered take under CESA if the activity results in injury to a SWHA. Take of SWHA requires consultation and subsequent authorization (i.e., in the form of an Incidental Take Permit) from CDFW pursuant to Section 2081 of CESA.

To reduce impacts to SWHA and habitat to ***less than significant with mitigation incorporated***, the measures below are recommended.

**Recommended Avoidance, and Minimization Measures.** The following measures are recommended to avoid, minimize, and mitigate direct or indirect impacts to this species:

- If nesting SWHA are determined present within the solar development area or within 0.5 miles of the solar development area during construction of the Project, ongoing monitoring by a qualified biologist may be required to ensure there are no impacts to this species and its habitat. The requirement for monitoring will be determined in consultation with CDFW biologists after they are notified of the nesting SWHA.



- SWHA shall be included in the WEAP described above for special-status plant species that will also educate staff on the presence of special-status wildlife species and ways to avoid and minimize impacts.
- A SWHA Management Plan should be developed and implemented by the Project to ensure that the solar development area and adjacent suitable SWHA foraging habitat achieve a performance standard of no net loss of SWHA habitat function and value following Project completion. The SWHA Management Plan should include, at a minimum, (1) requirements for timing of vegetation management and vegetation height to maximize SWHA access to prey species; (2) procedures to be followed in the event SWHA are present in an area, especially during nesting season; (3) elimination of interior fencing within the site and maximizing of visibility of perimeter fencing through flagging or other techniques to allow freedom of movement by SWHA and avoid collision; and (4) measures to potentially increase prey populations (e.g., burrowing rodents) such as avoiding rodenticide use or vegetation management. The SWHA Management Plan will be reviewed and approved by USFWS and CDFW and implemented for the Project duration, until decommissioning.
- Compensatory mitigation shall be provided for impacts to SWHA foraging habitat by Project infrastructure to achieve a performance standard of no net loss of habitat value to SWHA. The methods and implementation measures to achieve this performance standard shall be described in a mitigation plan to be submitted to the County of Sacramento for review prior to the start of construction. The Project may achieve the performance standard through the County of Sacramento Swainson's Hawk Mitigation Program or other compensatory programs (e.g., mitigation banks; conservation easements). Under the County of Sacramento program, mitigation would be provided for the change in habitat value from existing (75% of foraging habitat value remaining based on the AG-20 zoning) and the post-Project habitat value. Because the impacted area would be larger than 40 acres, the County Swainson's Hawk Mitigation Program would require the Project to provide mitigation lands.

#### a.8 Tricolored Blackbird

TRBL is a federal BCC and state threatened species, an SSC, and an SSHCP Covered Species. Dense stands of emergent vegetation, willows, thistle, Himalayan blackberry, or similar in the solar development area, although minimal, provide nesting habitat for TRBL, and open grassland and cultivated land provide foraging habitat for this species. Dudek conducted focused TRBL surveys within the solar development area from February through May 2021. Three TRBL species observations, including perching and foraging but no nesting, were made within the solar development area during the four survey passes conducted in 2021. No nesting colonies were observed. As a state-listed species, impacts to TRBL would be considered take under CESA and a significant impact under CEQA. If take of TRBL is anticipated, this Project action would require consultation and subsequent authorization in the form of a CDFW Incidental Take Permit pursuant to Section 2081 of CESA.

To reduce impacts to TRBL and habitat to ***less than significant with mitigation incorporated***, the measures below are recommended.

Recommended Avoidance and Minimization Measures. The following measures are recommended to avoid and minimize direct or indirect impacts to this species:

- A qualified biologist should conduct a pre-construction survey for nesting TRBL approximately 2 days prior to vegetation or tree removal or ground-disturbing activities during the nesting season (April through August). The survey should cover the limits of construction and suitable nesting habitat within 500 feet.
- If any active nests are observed during surveys, a qualified biologist should establish a suitable avoidance buffer from the active nest. The buffer distance for TRBL will be 500 feet and should be determined based on factors such as topographic features, intensity and extent of the disturbance, timing relative to the nesting cycle, and anticipated ground disturbance schedule. Limits of construction to avoid active nests should be established in the field with flagging, fencing, or other appropriate barriers and should be maintained until the chicks have fledged and the nests are no longer active, as determined by the qualified biologist.
- If vegetation removal activities are delayed, additional nest surveys should be conducted such that no more than 7 days elapse between the survey and vegetation removal activities. It is recommended that disturbing potential nesting habitat (i.e., trimming and/or vegetation removal) be performed outside of the nesting season (September through March) to avoid impacts to nesting birds.
- If an active nest is identified within 500 feet of the construction zone after construction has started, work within 500 feet of the nest should be halted until the qualified biologist can provide appropriate avoidance and minimization measures to ensure that the nest is not disturbed by construction. Appropriate measures may include a no-disturbance buffer until the birds have fledged, limitations on construction activities that generate substantial vibration and/or noise, and/or full-time monitoring by a qualified biologist during construction activities conducted near the nest.
- This species should be included in the WEAP described above for special-status plant species that will also educate staff on the presence of special-status wildlife species and ways to avoid and minimize impacts.

#### a.9 Valley Elderberry Longhorn Beetle

VELB is a federally threatened species and an SSHCP Covered Species. As a federally listed species, direct impacts to VELB would be considered take under the FESA. If the Project affects VELB and/or VELB habitat, then the Project would require consultation and subsequent incidental take authorization (in the form of a Biological Opinion or Letter of Concurrence) from USFWS pursuant to Section 7 of the FESA.

Suitable habitat for VELB has been identified within the PSA (i.e., elderberry plants within riparian and adjacent non-riparian areas). Dudek conducted focused surveys of elderberry plants within the solar development area and adjacent other lands (i.e., PSA) on February 19 and 25, 2021, and January 12, 2022, in accordance with the *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle*

(*Desmocercus californicus dimorphus*) (USFWS 2017b) and the *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (USFWS 1999).

A total of 13 elderberry plants were identified within the PSA, with one plant within 165 feet of the Project solar development area within non-riparian uplands, and two within non-riparian uplands of the solar development area. The focused surveys found that four plants, 2A-C, 7, 8, and 12, exhibited relict bore/exit holes from a burrowing insect, and no observations of VELB were recorded. Elderberry plant 2A-C is approximately 275 feet outside of the riparian habitat in the western vicinity of the PSA, and greater than 165 feet (i.e., avoidance buffer distance) from the Project solar development area. Elderberry plant 7 is approximately 145 feet outside of the riparian habitat and is greater than 165 feet from the Project solar development area. Elderberry plant 8 through 11 are approximately 130 feet outside of the riparian habitat and greater than 165 feet from the Project solar development area. Elderberry plant 12 is approximately 335 feet outside of the riparian habitat and is located greater than 165 feet from the Project solar development area. For the three elderberry plants occurring within the Project solar development area or within 165 of the Project solar development area that could be directly impacted by the Project, no observations of VELB were observed during focused surveys. All three plants were located within non-riparian uplands. Additionally, one of the three has clusters of stems that were both greater and less than 1 inch in diameter. No bore/exit holes or observations of VELB were recorded for these elderberry plants (see Table 18 for a complete summary of VELB focused survey results, impact types based on survey result findings and proximity to the solar development area, and proposed mitigation).

**Table 18. Summary of VELB Focused Survey Results, Impacts, and Mitigation**

| ID             | Location                            | Focused Survey Results                       | Impact Type <sup>a</sup> | Mitigation                           |
|----------------|-------------------------------------|----------------------------------------------|--------------------------|--------------------------------------|
| 1 <sup>b</sup> | Riparian                            | No presence observed                         | No impact                | None                                 |
| 2 <sup>b</sup> | Upland                              | Relict bore/exit holes, no presence observed | No impact                | None                                 |
| 3 <sup>b</sup> | Riparian                            | No presence observed                         | No impact                | None                                 |
| 4 <sup>b</sup> | Non-riparian, upland                | No presence observed                         | Direct                   | Compensatory mitigation at 1:1 ratio |
| 5              | Non-riparian, upland                | No presence observed                         | No impact                | None                                 |
| 6              | Non-riparian, upland                | No presence observed                         | Indirect                 | AMMs                                 |
| 7              | Riparian                            | Relict bore/exit holes, no presence observed | No impact                | None                                 |
| 8              | Non-riparian, converted agriculture | Relict bore/exit holes, no presence observed | No impact                | None                                 |
| 9              | Non-riparian, converted agriculture | No presence observed                         | No impact                | None                                 |
| 10             | Non-riparian, converted agriculture | No presence observed                         | No impact                | None                                 |
| 11             | Non-riparian, converted agriculture | No presence observed                         | No impact                | None                                 |

**Table 18. Summary of VELB Focused Survey Results, Impacts, and Mitigation**

| ID | Location                            | Focused Survey Results                       | Impact Type <sup>a</sup> | Mitigation                           |
|----|-------------------------------------|----------------------------------------------|--------------------------|--------------------------------------|
| 12 | Non-riparian, converted agriculture | Relict bore/exit holes, no presence observed | No impact                | None                                 |
| 13 | Non-riparian, upland                | No presence observed                         | Direct                   | Compensatory mitigation at 1:1 ratio |

**Notes:**

- <sup>a</sup> Impact Type: Direct- permanent physical loss (“take”) typically due to clearing and grading associated with implementation of a project; Indirect- reasonably foreseeable effects of a project implementation on remaining or adjacent resources outside the direct disturbance zone that may occur during typical grading or maintenance activities or later in time because of a project; None- no associated impacts.
- <sup>b</sup> Cluster of more than one elderberry plant in one location.

To reduce impacts to VELB and habitat to **less than significant with mitigation incorporated**, the measures below are recommended.

**Recommended Avoidance and Minimization Measures:** The following measures are recommended to avoid and minimize impacts:

Transplantation for direct impacts is not recommended for elderberry plants within the Project solar development area due to the unlikelihood of survival. As such, direct impacts (i.e., within 20 feet or less of solar development construction) will be mitigated at a 1:1 ratio and secured in accordance with the *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (Desmocerus californicus dimorphus)* (USFWS 2017b) and the *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (USFWS 1999).

Indirect impacts (i.e., plants between 20 to 100 feet of solar development construction) will be avoided and are subject to the implementation of the following AMMs:

- **Avoidance and Fencing.** Project activities that may damage or kill an elderberry plant (e.g., trenching, paving, etc.) should be avoided to the extent feasible. If avoidance of all plants is not feasible, impacts to plants will be compensated through planting of elderberry plants in areas not subject to project disturbance at a ratio of 1:1. All areas to be avoided during construction activities will be fenced and/or flagged as close to the Project solar development area as feasible. Temporary construction fencing and flagging shall be installed at least 165 feet outside the edge of the driplines of the elderberry plants. Environmentally sensitive area signs shall be erected along the edge of the avoidance area. In areas where encroachment on the 165-foot buffer has been approved by USFWS, a minimum setback of at least 20 feet from the dripline of each elderberry plant shall be provided, as well as documentation of USFWS setback approval.
- **Timing.** All activities that could occur within 165 feet of an elderberry plant will be conducted outside of the flight season of the VELB (i.e., March through July) to the maximum extent feasible.
- **Trimming.** If necessary, trimming may remove or destroy VELB eggs and/or larvae and may reduce the health and vigor of the elderberry plant. Therefore, to avoid and minimize direct impacts to VELB, trimming will occur between November and February and will avoid the removal of any



branches or stems that are greater than 1 inch in diameter. Measures to address regular and/or large-scale maintenance (trimming) should be established and approved by USFWS.

- Mowing. Mechanical weed removal within the dripline of any elderberry plant will be limited to the season when adult VELB are not active (i.e., August through February) and will avoid damage to the elderberry plant.
- Construction Monitoring. A qualified biologist will monitor the Project solar development area if work is approved to occur within the 165-foot avoidance buffer to assure that all avoidance and minimization measures are implemented. The amount and duration of monitoring will depend on the project specifics and should be discussed with USFWS.
- WEAP. A qualified biologist will provide training for all contractors, work crews, and any on-site personnel on the status of the VELB, its host plant and habitat, the need to avoid damaging the elderberry shrubs, and the possible penalties for not complying with these requirements.

#### a.10 Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp

Vernal pool fairy shrimp are a federally threatened and SSHCP Covered Species with a low potential to occur within the solar development area. There are known occurrences of this species within 5 miles of the PSA. Vernal pool tadpole shrimp are a federally endangered species with recorded known historic occurrences within the solar development area. Approximately 5.92 acres of low quality suitable aquatic habitat is present within the solar development area. Dudek conducted protocol-level surveys for both dry and wet season large-listed branchiopods within the solar development area. No observation of vernal pool fairy shrimp or vernal pool tadpole shrimp were made during the protocol-level surveys. Note that negative survey findings (i.e., no presence) does not demonstrate species absence, but does support the conclusion that this habitat is of low quality.

Vernal pool fairy shrimp and vernal pool tadpole shrimp species and their habitat are subject to agency jurisdiction pursuant to regulations under FESA, CESA, CFGC, and CEQA Guidelines. Measures to avoid, minimize, and mitigate impacts to jurisdictional wetlands and waters that provide potential large listed branchiopod habitat are provided in Section 6.2(c).

To reduce impacts to vernal pool fairy shrimp and vernal pool tadpole shrimp to ***less than significant with mitigation incorporated***, the measures below are recommended.

**Recommended Avoidance and Minimization Measures.** The following measures are recommended to avoid and minimize impacts:

Unless a smaller buffer is approved through formal consultation with USFWS, construction fencing shall be installed a minimum of 250 feet from the delineated wetland edge. All construction activities are prohibited within this buffer area. If total avoidance is achieved, no further action is required.

### a.11 American Badger

American badger is a state SSC and SSHCP Covered Species with a high potential to occur in grassland habitat such as that within the solar development area. American badger has not been documented within the solar development area, but there are known occurrences of American badger within 5 miles. Additionally, although American badger has not been documented in the solar development area, one collapsed burrow with badger sign (i.e., claw marks along both sides of entrance) was documented in the northern portion of the solar development area. In addition, this species is known to occur in the vicinity, and suitable habitat, as well as SSHCP modeled habitat, is present (Sacramento County 2018). Eventual solar development in the PSA could impact this species if the species is denning in or near the construction footprint during ground disturbance.

Impacts to this species would be ***less than significant with implementation of recommended avoidance and minimization measures.***

**Recommended Avoidance and Minimization Measures.** The following measures are recommended to avoid and minimize impacts:

- A qualified biologist should conduct focused surveys for American badger dens within 2 weeks prior to ground-disturbing activities in undeveloped grassland. The survey should cover the limits of ground disturbance and a 100-foot buffer. Any winter or natal American badger dens located during the survey should be evaluated (typically with remote cameras) to determine activity status.
- If American badger is identified, then prior to construction, the qualified biologist should establish a 100-foot no-disturbance buffer (e.g., mesh exclusion fencing, flagging, or similar) around any active American badger natal dens identified during the survey. The buffer should be maintained until the qualified biologist determines that the den is no longer active, and the young are no longer dependent upon the den for survival.
- If construction occurs during the non-breeding period (i.e., typically from June through February) and an active non-natal den is found in or adjacent to the construction footprint, a qualified biologist should attempt to trap or flush the individual and relocate it to suitable habitat away from construction. If no dens are observed, and/or after a trapping or flushing effort is completed, and/or after it is confirmed that a natal den is no longer active, the vacated or unoccupied den can be excavated, and construction can proceed.
- If American badger is determined present within the solar development area of the PSA, then ongoing monitoring by a qualified biologist may be required to ensure there are no impacts to this species and its habitat during construction and operation and maintenance activities for the Project.
- This species should be included in the WEAP described above for special-status plant species that will also educate staff on the presence of special-status wildlife species and ways to avoid and minimize impacts.

### a.12 Native Bats

Native bat roosting habitat in the solar development area is limited to isolated trees near seasonal ponds or other aquatic habitat that provide nearby foraging opportunities. No active bat roosts or signs of occupation, such as guano or staining, were detected during the reconnaissance-level field surveys. If bats are roosting in or adjacent to the solar development area, impacts could result from the permanent removal of roosting sites, such as trees and snags, or from Project-related noise disturbance to an occupied roosting site in the vicinity of construction. Native bat species are protected by the state under CFGC Section 4150 for non-game mammals (including bats). Should bats be roosting during construction activities, removal of active roost sites that would result in the harm or mortality of native bats and would be considered a violation of the take provisions of Section 4150 of the CFGC.

Impacts to native bats would be ***less than significant with implementation of recommended avoidance and minimization measures.***

**Recommended Avoidance and Minimization Measures.** The following measures are recommended to avoid and minimize impacts:

- A qualified biologist should conduct a habitat assessment for roosting bats within the solar development area. The habitat assessment should include a visual inspection of potential roosting features (bats need not be present) and presence of guano within the solar development area, access routes, and 300 feet around these areas. The qualified biologist should survey these areas no less than 30 days prior to the start of work. Potential roosting features found during the survey should be flagged or marked.
- Removal of potential roost habitat identified during the assessment (described above) should be avoided during the bat maternity season (i.e., May 1 through August 15). If removal of potential roost habitat occurs outside of the maternity season, no further mitigation should be required.
- If a bat roosting or maternity colony cannot be completely avoided, the individuals should be safely evicted under the direction of the qualified bat biologist. If individuals cannot be safely evicted due to factors such as lack of alternative roosting sites or the young still being reliant on adults, as determined by the qualified bat biologist, ground-disturbing activities within a specified distance of the roost (specified distance to be determined by the bat biologist, based on surroundings and vulnerability of roost site, etc.) should be postponed or halted until conditions are suitable for safe eviction or the roost has vacated naturally.
- If native bats are determined present within the solar development area, then ongoing monitoring by a qualified biologist may be required to ensure there are no impacts to this species and its habitat during construction and operation and maintenance activities for the Project.
- Prior to Project initiation, a Bat and Avian Protection Plan will be prepared in coordination with CDFW and USFWS to reduce/eliminate impacts to bat and avian species.

- Native bats should be included in the WEAP described above for special-status plant species that will also educate staff on the presence of special-status wildlife species and ways to avoid and minimize impacts.

#### a.13 Nesting Raptors and Migratory Birds

Potential nesting habitat for migratory bird species within the solar development area is generally limited to that for ground-nesting species. Other non-ground nesting species like bald eagles and white-tailed kites were observed within the solar development area and adjacent area (i.e., the PSA), but nesting habitat for the species is not present in the solar development area. Bank swallows have low to no potential to occur within the solar development area and there are known occurrences within 5 miles of the solar development area. Eventual development within the solar development area could involve removal of vegetation and isolated trees, which has the potential to impact nesting birds protected by the federal MBTA and CFGC. In addition to violating the protections under the MBTA and CFGC, direct or indirect impacts to nesting birds would likely be considered a potentially significant impact under CEQA. To avoid impacting active nests, it is recommended that tree or vegetation removal be conducted outside of the nesting season (i.e., February through August).

Impacts to nesting birds would be ***less than significant with implementation of recommended avoidance and minimization measures.***

**Recommended Avoidance and Minimization Measures.** The following measures are recommended to avoid and minimize impacts:

- A qualified biologist should conduct a survey for nesting birds within 1 week prior to vegetation removal or ground-disturbing activities during the nesting season within suitable habitat (i.e., February through August). The survey should cover the limits of construction and accessible suitable nesting habitat within 150 feet.
- If any active nests are observed during surveys, a qualified biologist should establish a suitable avoidance buffer from the active nest. The buffer distance will typically range from 50 to 300 feet and should be determined based on factors such as the species of bird, topographic features, intensity and extent of the disturbance, timing relative to the nesting cycle, and anticipated ground disturbance schedule. Limits of construction to avoid active nests should be established in the field with flagging, fencing, or other appropriate barriers and should be maintained until the chicks have fledged and the nests are no longer active, as determined by the qualified biologist.
- Throughout the duration of the Project, a qualified biologist will conduct up to twice-weekly bird mortality surveys, with particular attention on areas of recent or current Project activities.
- Vegetation or trees planned for removal shall be removed during the period of September through January, to avoid the nesting season. Any trees that are to be removed during the nesting season, which is February through August, will be surveyed by a qualified biologist and will only be removed if no nesting migratory birds are found. If vegetation removal activities are delayed, additional nest surveys should be conducted such that no more than 7 days elapse between the survey and vegetation removal activities.



- If an active nest is identified in or adjacent to the construction zone after construction has started, work in the vicinity of the nest should be halted as-needed until the Project biologist can provide appropriate avoidance and minimization measures to ensure that the nest is not disturbed by construction. Appropriate measures may include a no-disturbance buffer until the nest has fledged and/or full-time monitoring by a qualified biologist during construction activities conducted near the nest.
- Nesting birds should be included in the WEAP described above for special-status plant species that will also educate staff on the presence of special-status wildlife species and ways to avoid and minimize impacts.

**b) *The Project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS.***

Sensitive natural communities and DCH, including riparian habitat, fall under the jurisdiction of CDFW pursuant to CESA and Section 1600 of the CFGC, and USFWS pursuant to FESA. These communities are habitats that have a limited distribution and are often vulnerable to the environmental effects of projects. In addition, riparian habitat may also be subject to Sacramento County tree permits and fees for the removal of protected tree species within the riparian habitat zone (i.e., *Quercus* spp.). These communities may or may not contain special-status species or their habitats.

No sensitive natural communities were identified within the solar development area, including riparian habitat. Three CDFW sensitive natural communities, northern hardpan vernal pool, valley oak woodland, and riparian vegetation community, were identified within 5 miles of the PSA.

Impacts to sensitive natural communities that are present within the solar development area may be reduced to ***less than significant with mitigation incorporated*** with the implementation of measures recommended to address potential impacts to wetlands and other jurisdictional waters (see Section 6.2[c] below) and measures recommended to address potential impacts to oak species (see Section 6.2[e] below).

**c) *The Project would not have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.***

There are approximately 5.85 acres (9,260.86 linear feet) of aquatic resources in the solar development area. Of the total aquatic resources present within the solar development area that meet the criteria for jurisdictional waters of the U.S. under CWA Section 404 regulated by USACE and waters of the state under CWA Section 401 regulated by RWQCB and the definition of aquatic resources under CFGC Section 1602 regulated by the CDFW. Unlike USACE, RWQCB asserts jurisdiction over ephemeral drainages and isolated wetlands, and CDFW jurisdiction extends to the top of bank or edge of wetland or riparian vegetation (if present) rather than the OHWM of applicable aquatic resources. Furthermore, each resource present may be impacted by Project activities either indirectly, permanently, or temporarily. For permanent impact areas within the solar development area, approximately 0.08-acre of waters of the U.S. and/or state may be

impacted. Table 19 below outlines the indirect, direct permanent, and temporary by jurisdictional authority within the solar development area of the PSA.

**Table 19. Summary of Aquatic Resources Impacts by Jurisdiction within the Solar Development Area**

| Impact Type | Total Impacts in the Solar Development area By Jurisdictional Authority (acres) <sup>1</sup> |       |       |
|-------------|----------------------------------------------------------------------------------------------|-------|-------|
|             | CDFW                                                                                         | RWQCB | USACE |
| Indirect    | 2.44                                                                                         | 2.59  | 2.59  |
| Permanent   | 0.08                                                                                         | 0.08  | 0.08  |
| Temporary   | 3.17                                                                                         | 3.17  | 3.17  |

**Notes:** CDFW= California Department of Fish and Wildlife, RWQCB= Regional Water Quality Control Board, USACE= U.S. Army Corps of Engineers.

To reduce impacts to state and federally protected wetlands and waters to **less than significant with mitigation incorporated**, the measures below are recommended.

**Recommended Avoidance, and Minimization Measures:** The following measures are recommended to avoid and minimize impacts:

- Impacts to jurisdictional aquatic resources will require prior authorization from the resource agencies listed above in the form of waters and wetland permits (e.g., 404 Nationwide or Individual Permit, 401 Water Quality Certification, 1600 Lake or Streambed Alteration Agreement, and Floodplain Encroachment Permit), as well as compensatory mitigation to ensure no net loss of jurisdictional resources. Potential mitigation options include purchasing mitigation credits from an agency-approved wetlands mitigation bank, paying an agency-approved in-lieu fee, and/or developing conservations lands to compensate for permanent loss of resources. An Aquatic Resources Mitigation Plan and/or a Restoration and Revegetation Plan that includes aquatic resources may need to be prepared if impacts cannot be avoided.
- An Approved Jurisdictional Delineation from USACE for the final ARD Report must be completed prior to and/or in conjunction with permit submittals for USACE, CDFW, and RWQCB.
- Jurisdictional wetlands that provide habitat to special-status species (e.g., CTS, large-listed branchiopods, WST, northwestern pond turtle). Additional mitigation for potential direct and indirect impacts to special-status species habitat will achieve a no net loss of habitat value at a mitigation ratio determined by the USFWS and CDFW for species within their respective jurisdiction.
- Aquatic resources should be included in the WEAP described above for special-status plant species that will also educate staff on the presence of special-status wildlife species and ways to avoid and minimize impacts.

- d) ***The Project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.***

As stated above, agricultural areas and undeveloped grassland in the solar development area provide nursery and migratory habitat for common wildlife species, and the Cosumnes River corridor in the western vicinity of the PSA within less than 1,500 feet from the solar development area is a potential riparian connection, providing native habitat for resident wildlife, as well as linkages to additional native habitat in the surrounding area.

According to the California Essential Habitat Connectivity, grasslands within the solar development area are not specifically identified as Essential Connectivity Areas or Natural Landscape Blocks. In addition, there is ample similar open land available in the Project vicinity and many thousands of acres of habitat for migrating birds. Potential Project impacts to wildlife corridors and habitat linkages would be considered a significant impact under CEQA because of the sensitivity of the riparian corridor within the adjacent other lands of the PSA. However, recommended avoidance and minimization measures would ensure this impact remains ***less than significant with mitigation incorporated.***

- e) ***The Project would conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.***

Protected tree species are primarily located within the valley oak woodland/riparian corridor adjacent to the Cosumnes River in the PSA, outside of the solar development area. To the extent feasible, it is recommended that the Project avoid all impacts to tree resources, specifically the removal of trees and/or work within the dripline of each tree. Tree numbers 4001 through 4420 and 4422 are located either within the solar development area and/or adjacent to the solar development area and may be directly impacted by Project activities. Tree numbers 4412 and 4422 are native oak trees; however, they are not protected as they are dead. No trees will require a Sacramento County Tree Removal Permit, as none of the trees fall within the Sacramento County Tree Preservation Ordinance requirements.

To reduce impacts to biological resources, such as trees, to ***less than significant with mitigation incorporated,*** the measures below are recommended.

Recommended Avoidance, and Minimization Measures: The following measures are recommended to avoid and minimize impacts:

- If tree removal and/or work within the dripline cannot be avoided, then the Sacramento County Tree Preservation Ordinance requires a tree removal permit for the removal of any native oak with a single trunk measuring 6 inches or greater in DBH, or a multiple-trunked tree with an aggregate DBH measuring 10 inches or greater. This ordinance also prohibits grading, trenching, or filling any area within the dripline of a native oak without being issued a permit. Potential impacts to trees must be mitigated in accordance with the Sacramento County Tree Preservation Ordinance.
- For trees that need removal and do not fall within Sacramento County Tree Preservation Ordinance requirements, a Landscaping Plan will be prepared and submitted prior to the start of Project activities.

f) ***The Project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.***

The County adopted the SSHCP in 2019, which established a regional habitat conservation program for the South Sacramento area. The SSHCP provides simplified permitting for the impacts of identified covered activities to certain special-status covered species and wetlands. Most SSHCP covered activities are located within Sacramento County's Urban Services Boundary and the Urban Development Area defined in the SSHCP. The Project land is outside of those areas. Solar development outside the Urban Development Area is not a covered activity, is not subject to the SSHCP permitting process, and is not otherwise subject to regulation under the SSHCP.

The SSHCP contemplates those activities that are not covered activities, and therefore are not regulated by the SSHCP, may nevertheless occur within the Plan Area of the SSHCP with the approval of the applicable state and federal environmental agencies. For example, the SSHCP acknowledges that the Sacramento County General Plan provides for land uses that are not covered activities, but that are within the Plan Area of the SSHCP. The SSHCP recognizes that land uses outside of the Plan Area that are not covered activities may be permitted through separate federal and state authorization. While mitigation banks in the Plan Area are not a covered activity, the SSHCP provides for the acquisition of mitigation bank credits by the South Sacramento Conservation Agency to meet certain of the SSHCP goals and objectives (Sacramento County 2018).

The Project will obtain applicable permits and other approvals from the USFWS, USACE, CDFW, and RWQCB, and will further minimize and mitigate impacts on natural resources to achieve comply with the regulatory standards of these agencies. These are the same regulatory standards applied by the USFWS and the other environmental agencies in their review and approval of the SSHCP. Therefore, the Project mitigation strategy is designed to achieve the mitigation standards applicable to covered activities under the SSHCP.

During the 30-year life of the Project, the lands within the solar development area would not be available for acquisition by the South Sacramento Conservation Agency and inclusion within the SSHCP Preserve System. The solar development area will continue to provide some habitat value for SSHCP Covered Species, the lands in the solar development area but could not be acquired and considered for inclusion in the SSHCP preserve System prior to the decommissioning of the Project.

The Project will provide compensatory mitigation for impacts to aquatic resources and specific SSHCP covered species through the acquisition of credits from existing mitigation banks and other compensatory mitigation.

The SSHCP included an inventory of undeveloped potential habitat for SSHCP Covered Species in the SSHCP Plan Area and in each Preserve Planning Unit; the Project is in Preserve Planning Unit 5. That inventory is excerpted below and compared with the acres of land cover proposed within only the solar development area for the Project (Table 20).



**Table 20. South Sacramento Habitat Conservation Plan Modeled Special-Status Wildlife Species Habitat and Land Cover within Undeveloped Lands in Plan Area and the Solar Development Area**

| Habitat Model Land Cover Types                                 | Total Modeled Habitat Potentially Available in SSHCP Plan Area (acres) | Total Modeled Habitat Potentially Available in SSHCP Preserve Planning Unit 5 (acres) | Total Modeled Habitat with the Solar Development Area of the Project (acres) |
|----------------------------------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| <b>Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp</b> |                                                                        |                                                                                       |                                                                              |
| Valley Grassland                                               | 97,349                                                                 | 13,028                                                                                | 293.75                                                                       |
| Vernal Pool                                                    | 4,536                                                                  | 339                                                                                   | 3.31                                                                         |
| Swale                                                          | 1,252                                                                  | 89                                                                                    | 1.80                                                                         |
| Streams/Creeks (VPIH)                                          | 73                                                                     | 0.4                                                                                   | 0                                                                            |
| <b>Valley Elderberry Longhorn Beetle</b>                       |                                                                        |                                                                                       |                                                                              |
| Mine Tailing Riparian Woodland                                 | 641                                                                    | 59                                                                                    | 0                                                                            |
| Mixed Riparian Woodland                                        | 5,785                                                                  | 1,169                                                                                 | 0                                                                            |
| Mixed Riparian Scrub                                           | 1,451                                                                  | 173                                                                                   | 0                                                                            |
| <b>California Tiger Salamander – Upland Habitat</b>            |                                                                        |                                                                                       |                                                                              |
| Blue Oak Savanna                                               | 3,322                                                                  | 242                                                                                   | 0                                                                            |
| Blue Oak Woodland                                              | 3,774                                                                  | 992                                                                                   | 0                                                                            |
| Valley Grassland <sup>1</sup>                                  | 78,274                                                                 | 13,897                                                                                | 353.23                                                                       |
| <b>California Tiger Salamander – Aquatic Habitat</b>           |                                                                        |                                                                                       |                                                                              |
| Vernal Pool                                                    | 3,033                                                                  | 277                                                                                   | 3.31                                                                         |
| Seasonal Wetland                                               | 1,391                                                                  | 355                                                                                   | 0                                                                            |
| <b>Western Spadefoot – Upland Habitat</b>                      |                                                                        |                                                                                       |                                                                              |
| Blue Oak Savanna                                               | 5,637                                                                  | 692                                                                                   | 0                                                                            |
| Blue Oak Woodland                                              | 9,132                                                                  | 5,864                                                                                 | 0                                                                            |
| Valley Grassland <sup>1</sup>                                  | 135,094                                                                | 27,463                                                                                | 353.23                                                                       |
| <b>Western Spadefoot – Aquatic Habitat</b>                     |                                                                        |                                                                                       |                                                                              |
| Vernal Pool                                                    | 4,536                                                                  | 339                                                                                   | 3.31                                                                         |
| Swale                                                          | 1,252                                                                  | 89                                                                                    | 1.80                                                                         |
| Seasonal Wetland                                               | 2,600                                                                  | 446                                                                                   | 0                                                                            |
| Open Water                                                     | 2,344                                                                  | 365                                                                                   | 0                                                                            |
| Streams/Creeks                                                 | 2,674                                                                  | 481                                                                                   | 0                                                                            |

**Table 20. South Sacramento Habitat Conservation Plan Modeled Special-Status Wildlife Species Habitat and Land Cover within Undeveloped Lands in Plan Area and the Solar Development Area**

| Habitat Model Land Cover Types                          | Total Modeled Habitat Potentially Available in SSHCP Plan Area (acres) | Total Modeled Habitat Potentially Available in SSHCP Preserve Planning Unit 5 (acres) | Total Modeled Habitat with the Solar Development Area of the Project (acres) |
|---------------------------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| Streams/Creeks (VPIH)                                   | 73                                                                     | 0.4                                                                                   | 0                                                                            |
| <b>Northwestern Pond Turtle – Upland Habitat</b>        |                                                                        |                                                                                       |                                                                              |
| Blue Oak Woodland                                       | 7,610                                                                  | 4,983                                                                                 | 0                                                                            |
| Blue Oak Savanna                                        | 4,825                                                                  | 519                                                                                   | 0                                                                            |
| Valley Grassland <sup>1</sup>                           | 91,580                                                                 | 22,373                                                                                | 46.48                                                                        |
| Mine Tailing Riparian Woodland                          | 306                                                                    | 59                                                                                    | 0                                                                            |
| Mixed Riparian Woodland                                 | 5,347                                                                  | 1,152                                                                                 | 0                                                                            |
| Mixed Riparian Scrub                                    | 1,178                                                                  | 170                                                                                   | 0                                                                            |
| <b>Northwestern Pond Turtle – Aquatic Habitat</b>       |                                                                        |                                                                                       |                                                                              |
| Freshwater Marsh                                        | 2,240                                                                  | 122                                                                                   | 0                                                                            |
| Open Water                                              | 1,441                                                                  | 205                                                                                   | 0                                                                            |
| Stream/Creeks                                           | 2,674                                                                  | 480                                                                                   | 0                                                                            |
| <b>Swainson’s Hawk – Nesting Habitat</b>                |                                                                        |                                                                                       |                                                                              |
| Mixed Riparian Woodland                                 | 5,785                                                                  | 1,169                                                                                 | 0                                                                            |
| Mixed Riparian Scrub                                    | 1,449                                                                  | 173                                                                                   | 0                                                                            |
| <b>Swainson’s Hawk – Foraging Habitat</b>               |                                                                        |                                                                                       |                                                                              |
| Valley Grassland <sup>1</sup>                           | 133,705                                                                | 26,503                                                                                | 353.23                                                                       |
| Cropland                                                | 47,905                                                                 | 2,549                                                                                 | 5.91                                                                         |
| Irrigated Pasture-Grassland                             | 15,991                                                                 | 2,203                                                                                 | 0                                                                            |
| Vernal Pool                                             | 4,536                                                                  | 339                                                                                   | 3.31                                                                         |
| Seasonal Wetland                                        | 2,600                                                                  | 446                                                                                   | 0                                                                            |
| Swale                                                   | 1,252                                                                  | 89                                                                                    | 1.80                                                                         |
| <b>Western Burrowing Owl – Nesting/Foraging Habitat</b> |                                                                        |                                                                                       |                                                                              |
| Valley Grassland <sup>1</sup>                           | 135,112                                                                | 27,463                                                                                | 353.23                                                                       |
| Blue Oak Savanna                                        | 5,637                                                                  | 692                                                                                   | 0                                                                            |
| Cropland                                                | 47,905                                                                 | 2,549                                                                                 | 5.91                                                                         |

**Table 20. South Sacramento Habitat Conservation Plan Modeled Special-Status Wildlife Species Habitat and Land Cover within Undeveloped Lands in Plan Area and the Solar Development Area**

| Habitat Model Land Cover Types                         | Total Modeled Habitat Potentially Available in SSHCP Plan Area (acres) | Total Modeled Habitat Potentially Available in SSHCP Preserve Planning Unit 5 (acres) | Total Modeled Habitat with the Solar Development Area of the Project (acres) |
|--------------------------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| Irrigated Pasture-Grassland                            | 15,991                                                                 | 2,203                                                                                 | 0                                                                            |
| <b>Western Burrowing Owl – Foraging Habitat</b>        |                                                                        |                                                                                       |                                                                              |
| Vernal Pool                                            | 4,536                                                                  | 339                                                                                   | 3.31                                                                         |
| Swale                                                  | 1,252                                                                  | 89                                                                                    | 1.80                                                                         |
| Seasonal Wetland                                       | 2,600                                                                  | 446                                                                                   | 0                                                                            |
| Stream/Creek (VPIH)                                    | 73                                                                     | 0.4                                                                                   | 0                                                                            |
| <b>Tricolored Blackbird – Nesting/Foraging Habitat</b> |                                                                        |                                                                                       |                                                                              |
| Valley Grassland <sup>1</sup>                          | 135,112                                                                | 27,463                                                                                | 353.23                                                                       |
| Cropland                                               | 47,905                                                                 | 2,549                                                                                 | 5.91                                                                         |
| Seasonal Wetland                                       | 2,600                                                                  | 446                                                                                   | 0                                                                            |
| Freshwater Marsh                                       | 2,922                                                                  | 159                                                                                   | 0                                                                            |
| <b>Tricolored Blackbird – Foraging Habitat</b>         |                                                                        |                                                                                       |                                                                              |
| Irrigated Pasture-Grassland                            | 15,991                                                                 | 2,203                                                                                 | 0                                                                            |
| Vernal Pool                                            | 4,536                                                                  | 339                                                                                   | 3.51                                                                         |
| Swale                                                  | 1,222                                                                  | 89                                                                                    | 1.80                                                                         |
| Open Water                                             | 2,344                                                                  | 365                                                                                   | 0                                                                            |

**Source:** Sacramento County 2018

**Notes:**

- <sup>1</sup> Valley Grassland is synonymous with California Annual Grassland
- SSHCP= South Sacramento Habitat Conservation Plan; VPIH= Vernal Pool Invertebrate Habitat.
  - No SSHCP Valley Grassland landcover was modeled within the solar development area of the Project Study Area (PSA), however, approximately 357.61 acres of SSHCP California Annual Grassland landcover, a similar vegetation community, was mapped within the solar development area of the PSA.
  - For this table, the aquatic resource acreages are based on the total of SSHCP modeled landcover and differs from the final acreages defined by the aquatic resource delineation conducted for the Project, as analyzed further within this document.

As Table 20 indicates, The Project impacts an extremely small percentage of the SSCHP modeled habitat in SSHCP Preserve Planning Unit 5. During the 30-year life of the Project, approximately 0.001% of the inventory of seasonal wetlands, and less than 2.02% of swales and 1.04% of vernal pools in Planning Unit 5 would not be available for acquisition by the South Sacramento Conservation Agency.

The solar development area is a potential connectivity site between the Cosumnes River and the existing preserves to the southeast of Dillard Road. The SSHCP design focus in Preserve Planning Unit 5 is primarily to provide habitat linkages among existing and future preserves both outside and inside the Urban Development Area, primarily along the Cosumnes River/Deer Creek Corridor.

The existing fencing around the solar development area currently may limit movement of certain larger mammals (i.e., American badger). Small to medium-sized mammals such as coyotes, raccoons, and possums will have the ability to move through the site, either digging under the existing fencing or passing through gaps. Coyotes were observed several times during visits to the site. Dillard Road does not carry a high traffic volume<sup>1</sup> and the orchard to the southeast of the site is unfenced, making transit possible from the Cosumnes River through the subject property to the large preserves southeast of the orchard. In addition to terrestrial mammals, the open grassland of the subject property can provide a movement corridor for bird species that are less likely to move through a developed area, including the red-tailed hawk and northern harrier that were observed perching on and moving through the site.

The solar development area will allow for continued wildlife movement through the Cosumnes River corridor and across the project lands for common species and SSHCP covered species. Therefore, the Project fencing may impair wildlife movement through the solar development area by larger mammals (i.e., American badger). However, based on the extended analysis conducted for the Project for SWHA space use (Section 5.7.1.4), areas with solar panels can continue to provide foraging habitat for raptor species if appropriate vegetation is maintained under and between solar arrays (Estep Environmental Consulting 2021).

The impacts to SSHCP land cover types from Project development are a very small percentage of the inventory of those lands in Preserve Planning Unit 5 and an even smaller percentage of the modeled habitat in the SSHCP Plan Area. Mitigation for the Project would include incorporating the AMMs from the SSHCP, despite the Project not receiving permit coverage under the SSHCP. This mitigation would ensure that Project effects on SSHCP Covered Species, if present, would be avoided and minimized in the same way as if the SSHCP permits applied to the Project.

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<sup>1</sup> Measured 24-hour traffic volumes on Dillard Road at Meiss Road ranged from 4032 to 5410 daily vehicles during measurements taken from 2015 through 2019. No measurements are available that specify the time of day for traffic levels. However, if it assumed that 75% of this traffic happens during the hours of 6:00 a.m.–6:00 p.m., that daily traffic amounts to 5.6 cars per minute during the day (including both directions) and 1.9 cars per minute during the evening (again, including both directions).



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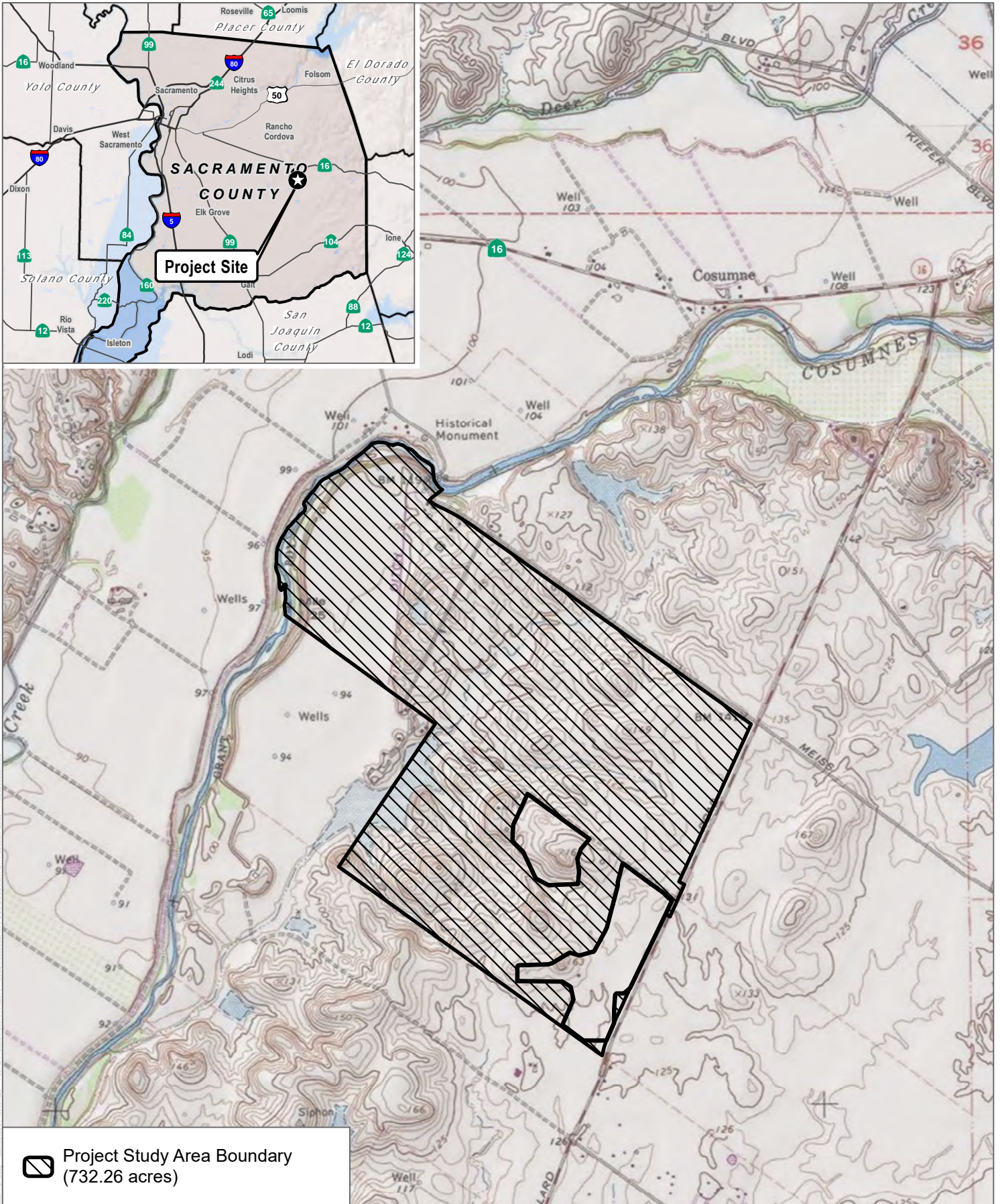
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SOURCE: USGS 7.5-Minute Series Sloughouse Quadrangle, Environmentally Preferred Alternative Site Plan - DESRI (6/24/2022)

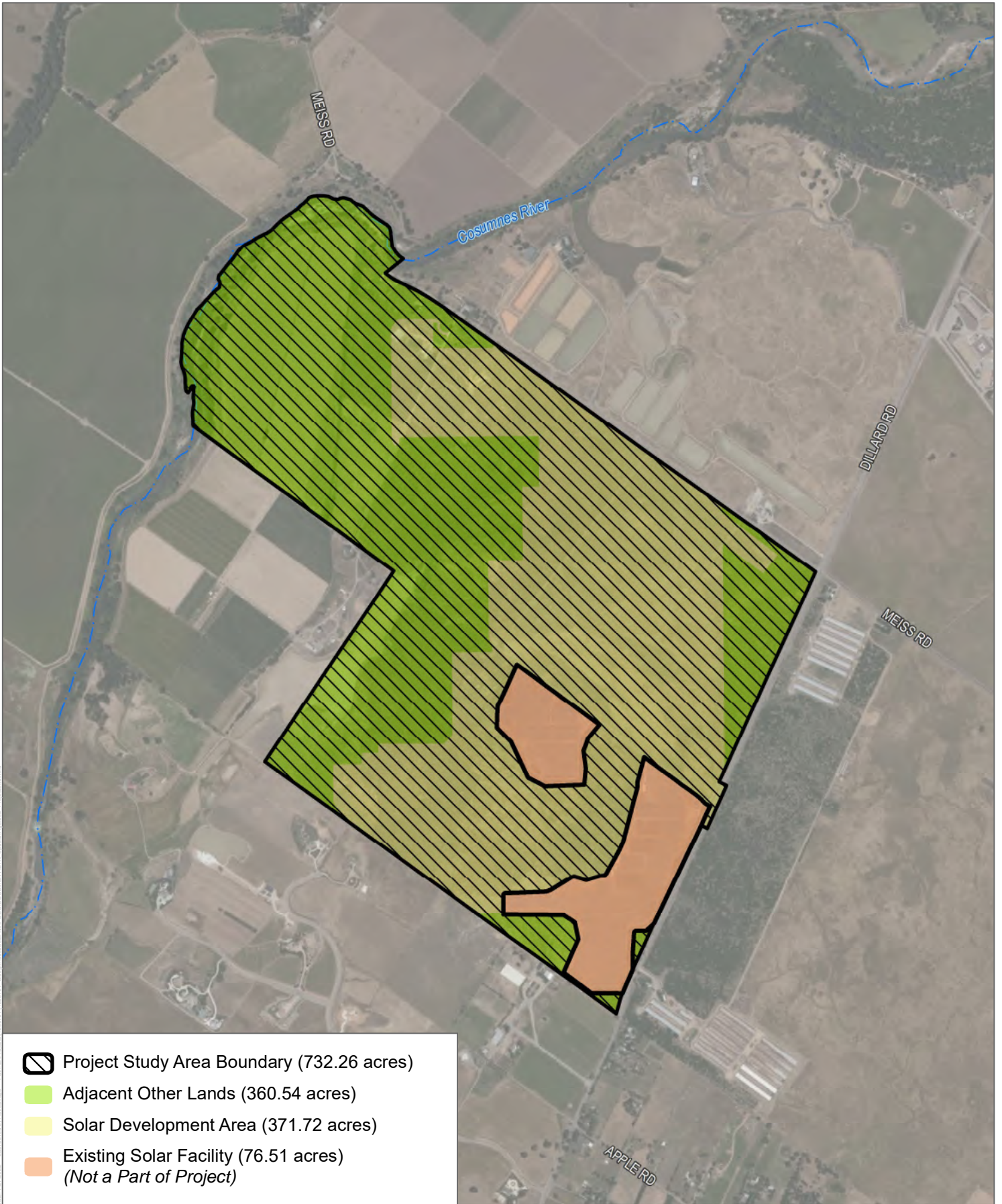
**FIGURE 1**

**Project Location**

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SOURCE: Bing Maps (2020), Sacramento County (2019), Environmentally Preferred Alternative Site Plan - DESRI (6/24/2022)

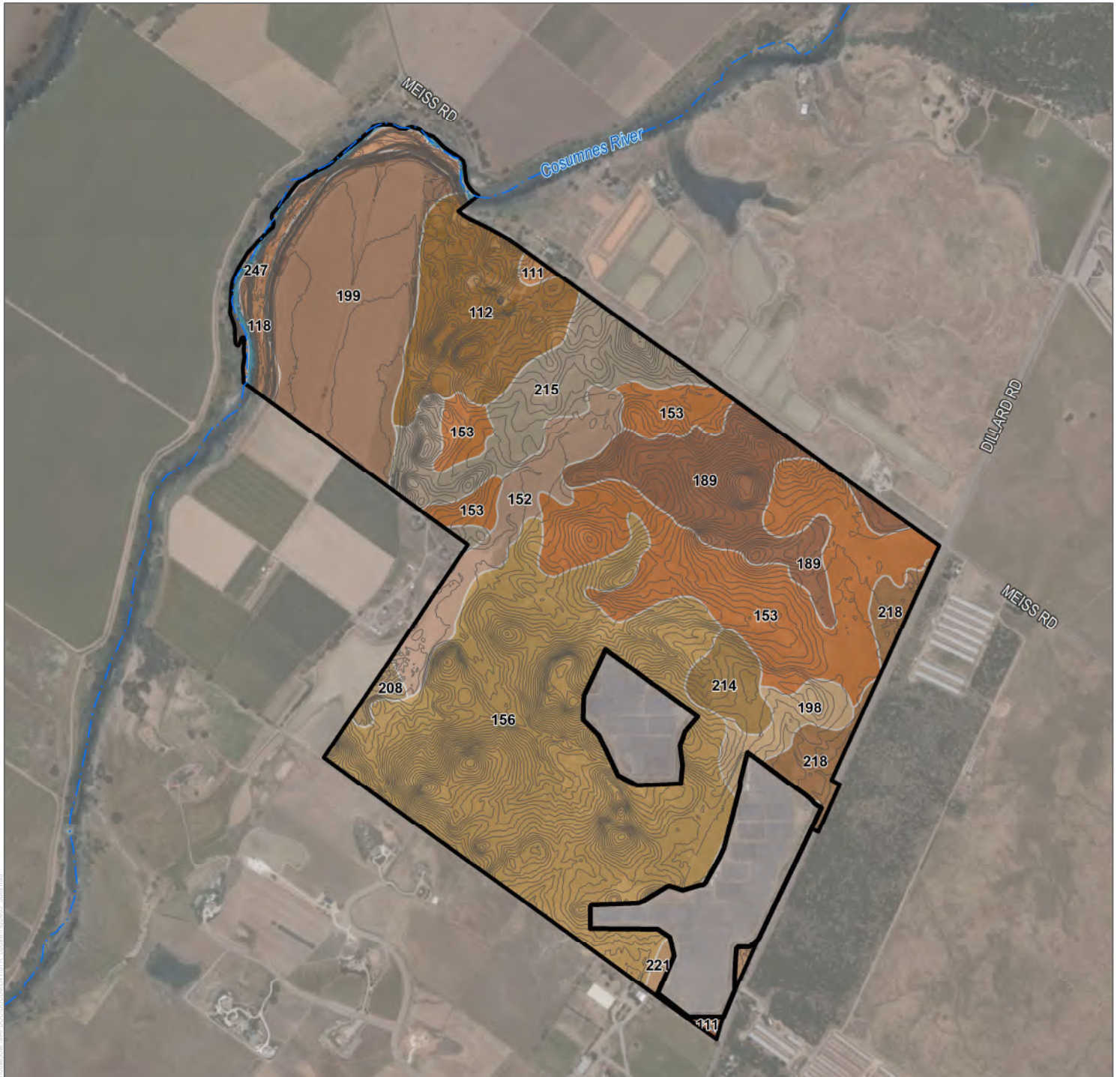
**FIGURE 2**

**Project Setting**

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- Project Study Area Boundary (732.26 acres)
  - NHD Flowline
  - 2-foot Contours
- Soil Classification**
- |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li> 111 : Bruella sandy loam, 0 to 2 percent slopes</li> <li> 112 : Bruella sandy loam, 2 to 5 percent slopes</li> <li> 118 : Columbia sandy loam, drained, 0 to 2 percent slopes, occasionally flooded</li> <li> 152 : Galt clay, 0 to 2 percent slopes</li> <li> 153 : Galt clay, 2 to 5 percent slopes</li> <li> 156 : Hadselville-Pentz complex, 2 to 30 percent slopes</li> <li> 189 : Peters clay, 1 to 8 percent slopes</li> </ul> | <ul style="list-style-type: none"> <li> 198 : Redding gravelly loam, 0 to 8 percent slopes</li> <li> 199 : Reiff fine sandy loam, 0 to 2 percent slopes, occasionally flooded</li> <li> 208 : Sailboat silt loam, drained, 0 to 2 percent slopes, occasionally flooded</li> <li> 214 : San Joaquin silt loam, 0 to 3 percent slopes</li> <li> 215 : San Joaquin silt loam, 3 to 8 percent slopes</li> <li> 216 : San Joaquin-Durixeralfs complex, 0 to 1 percent slopes</li> <li> 217 : San Joaquin-Galt complex, leveled, 0 to 1 percent slopes</li> <li> 218 : San Joaquin-Galt complex, 0 to 3 percent slopes</li> <li> 221 : San Joaquin-Xerarents complex, leveled, 0 to 1 percent slopes</li> <li> 247 : Water</li> </ul> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

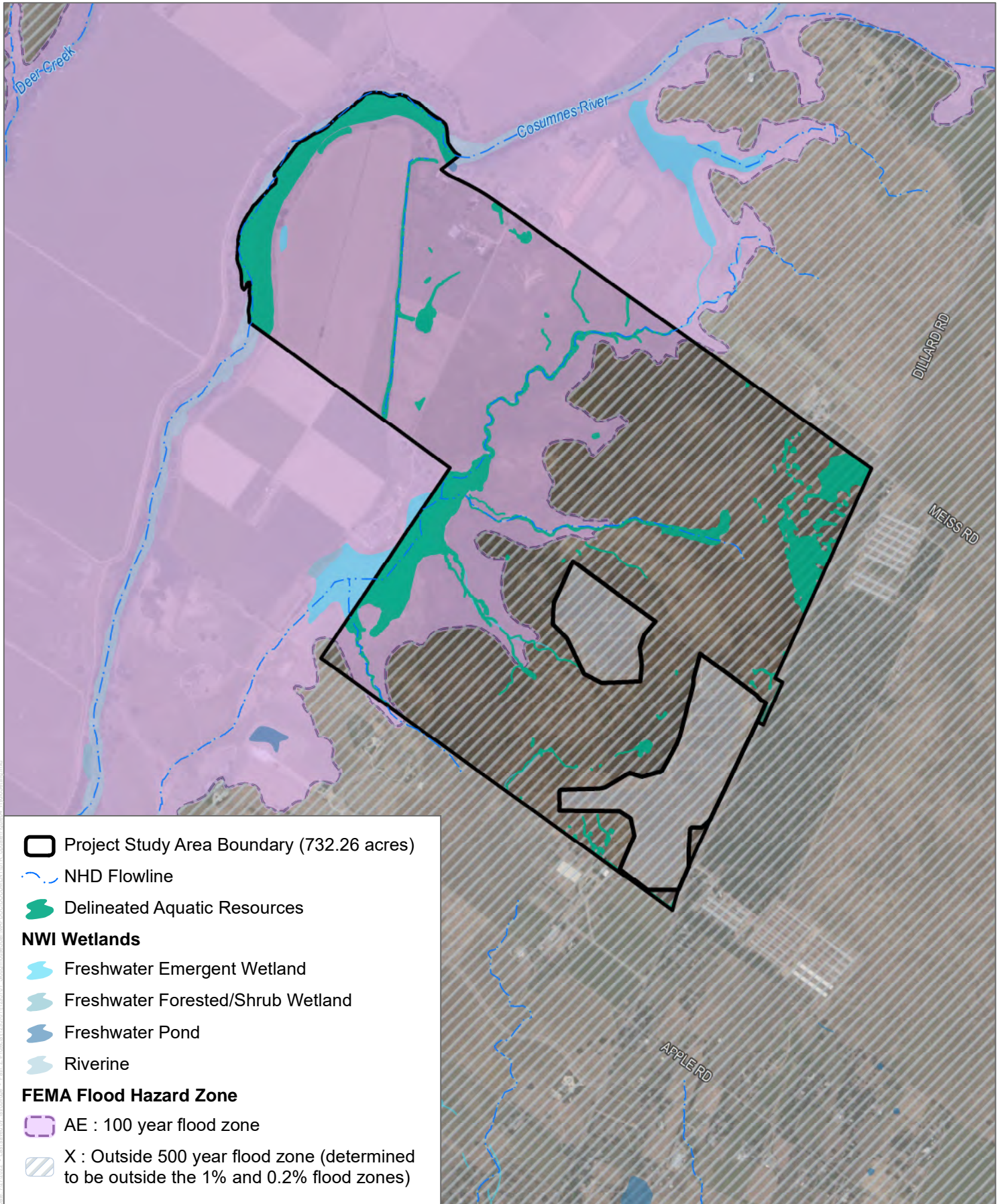
SOURCE: Bing Maps (2020), Sacramento County (2019), USDA 2019, Environmentally Preferred Alternative Site Plan - DESRI (6/24/2022)

**FIGURE 3**

**Soil and Terrain Setting**

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SOURCE: Bing Maps (2020), NHD (2019), Sacramento County (2019), USFWS (2020), FEMA (2019), Environmentally Preferred Alternative Site Plan - DESRI (6/24/2022)

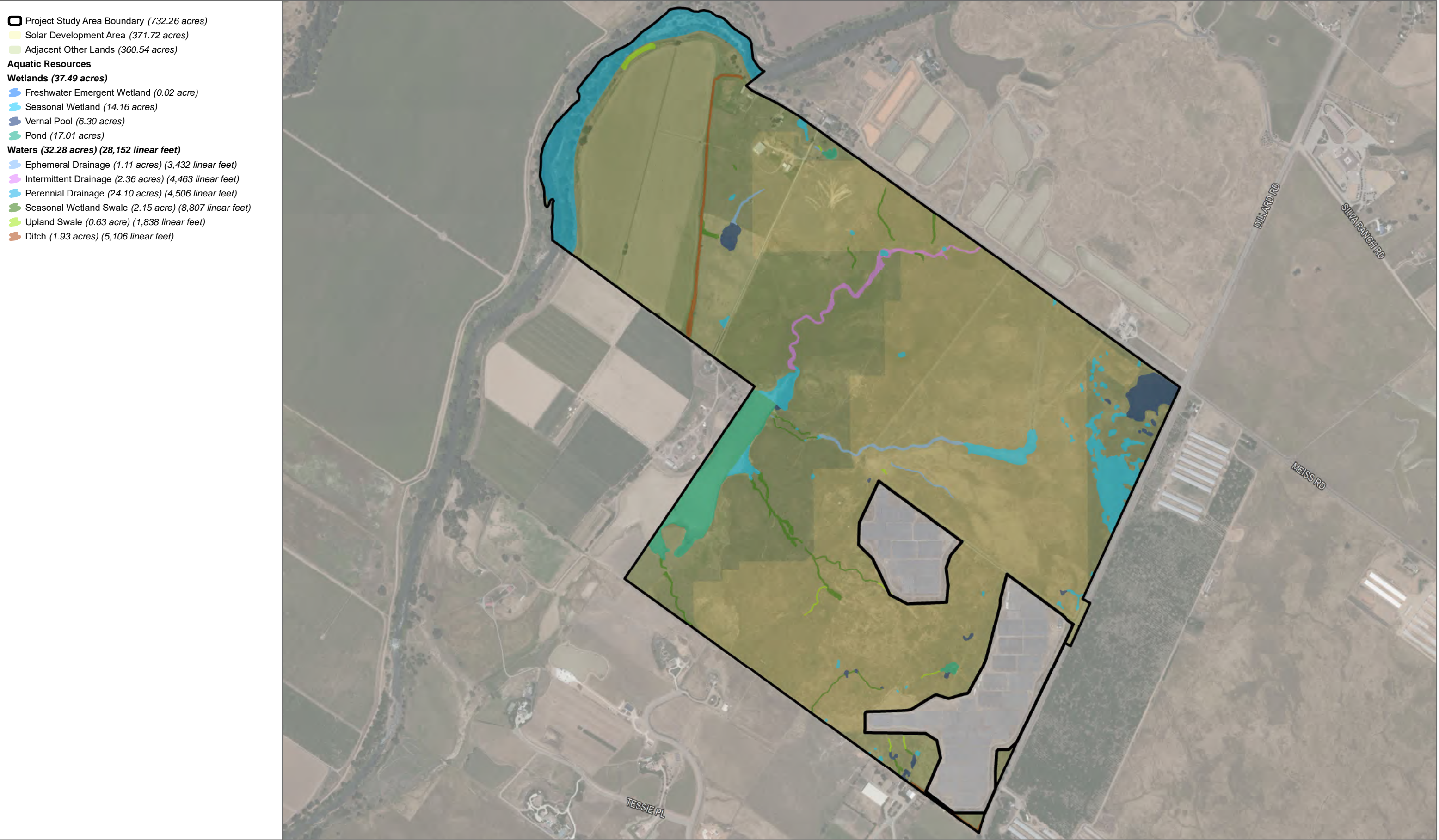
**FIGURE 4**

Hydrologic Setting

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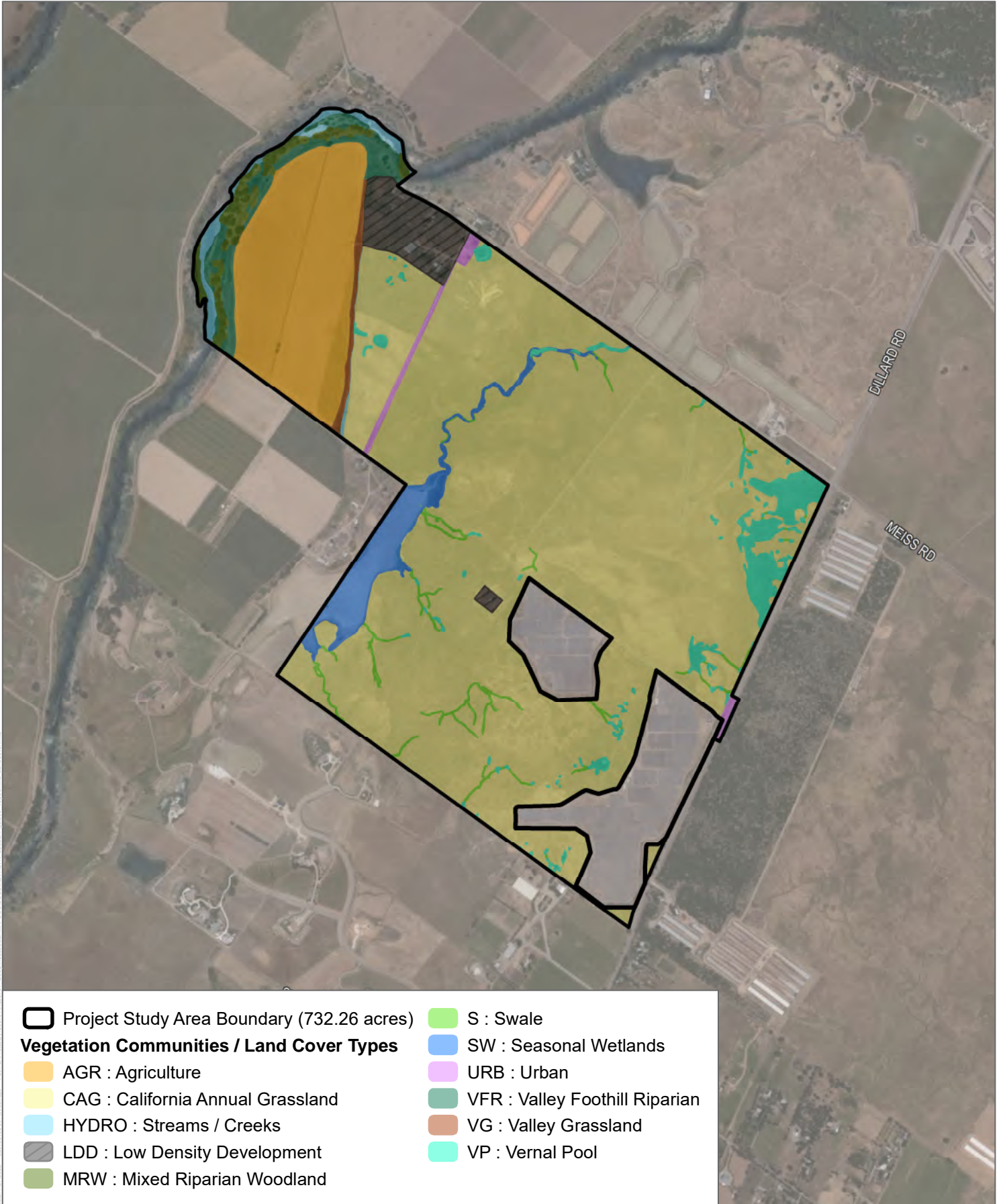


SOURCE: Bing Maps (2020), Environmentally Preferred Alternative Site Plan - DESRI (6/24/2022)

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SOURCE: Bing Maps (2020), Sacramento County (2019), Environmentally Preferred Alternative Site Plan - DESRI (6/24/2022)

**FIGURE 6**

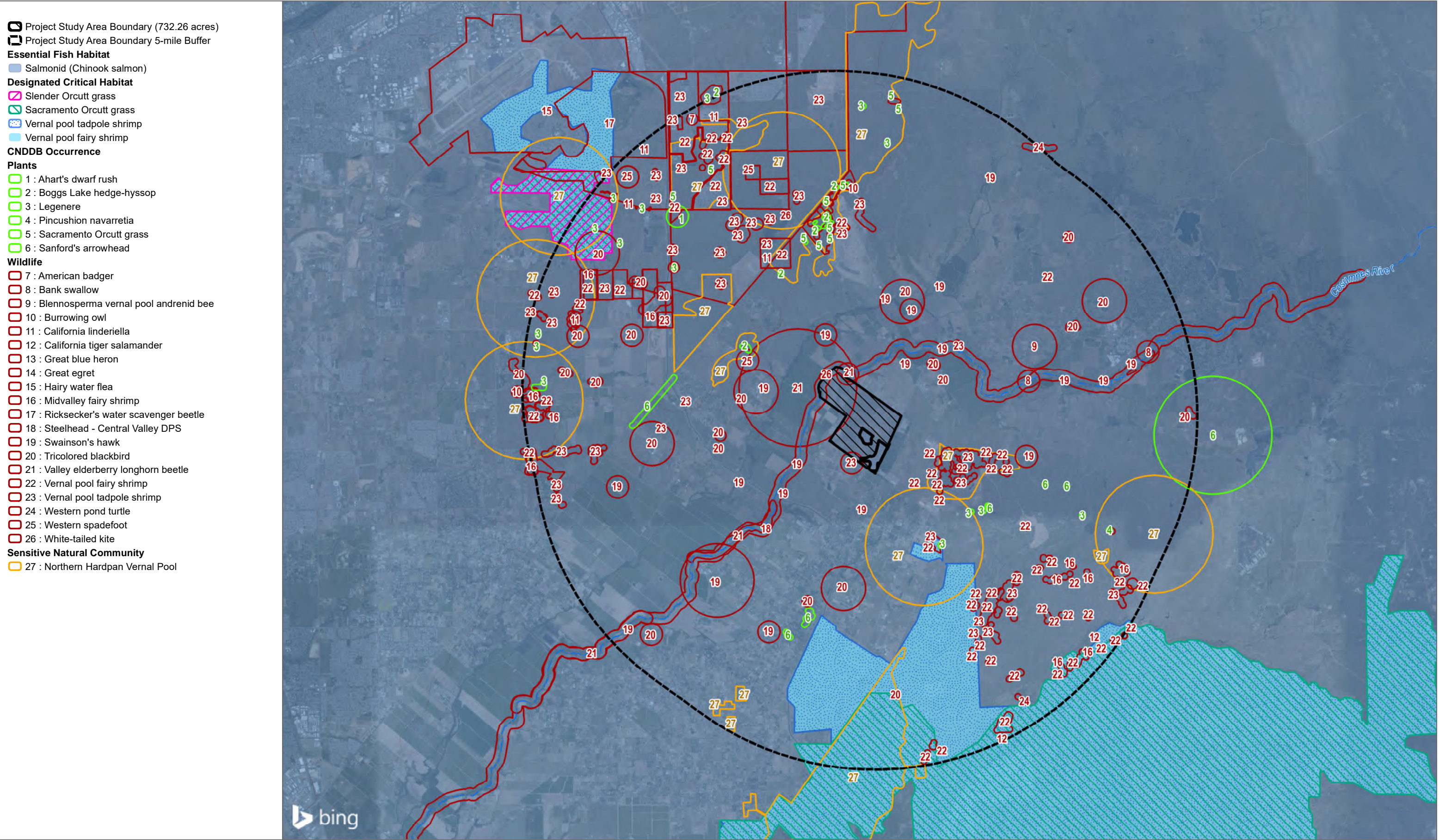
**Vegetation and Land Cover**

Biological Technical Report for the Sloughouse Solar Project



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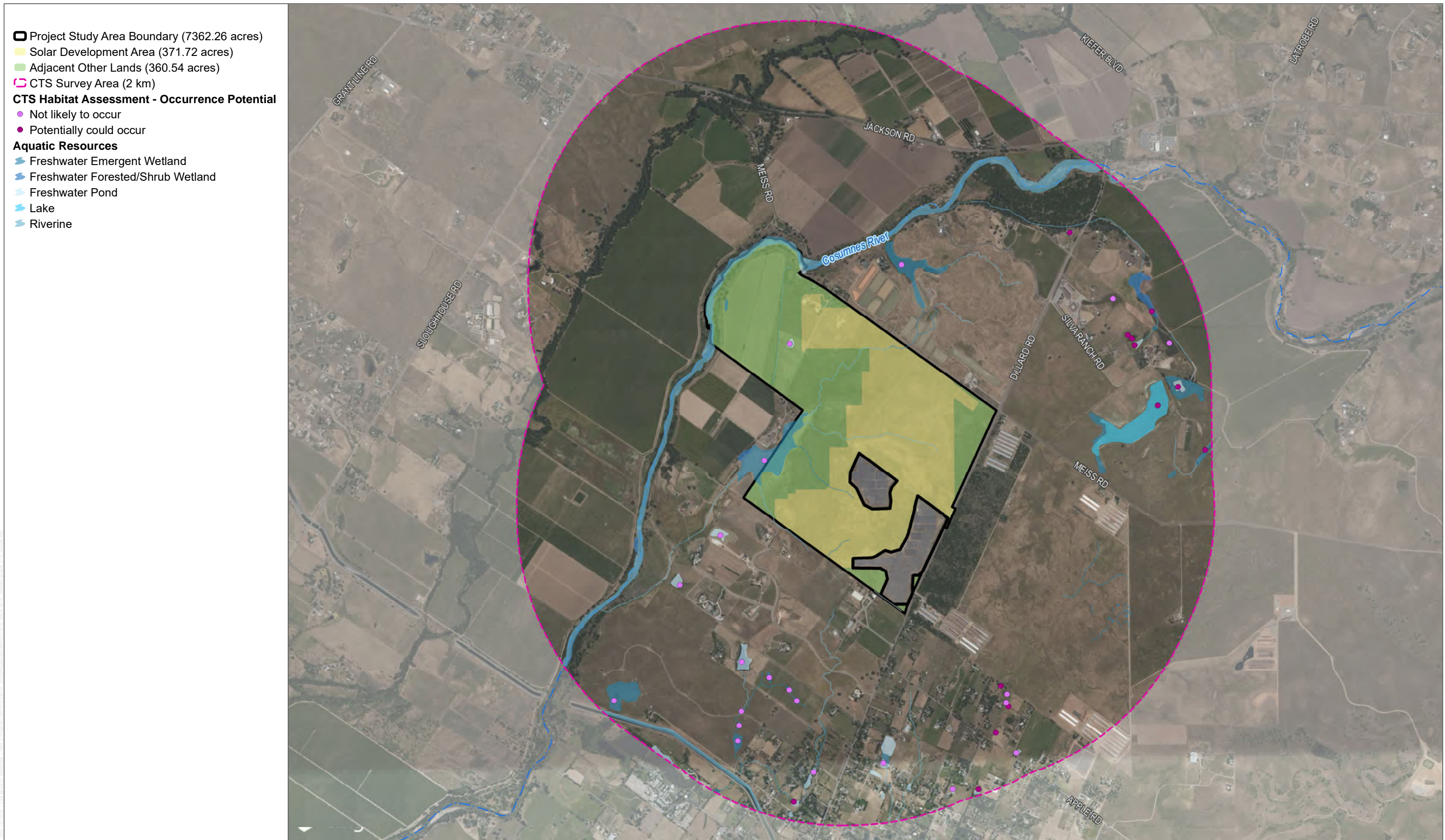
SOURCE: Bing Maps (2020), CDFW (2020), USFWS (2020), NOAA (2021), Environmentally Preferred Alternative Site Plan - DESRI (6/24/2022)

FIGURE 7



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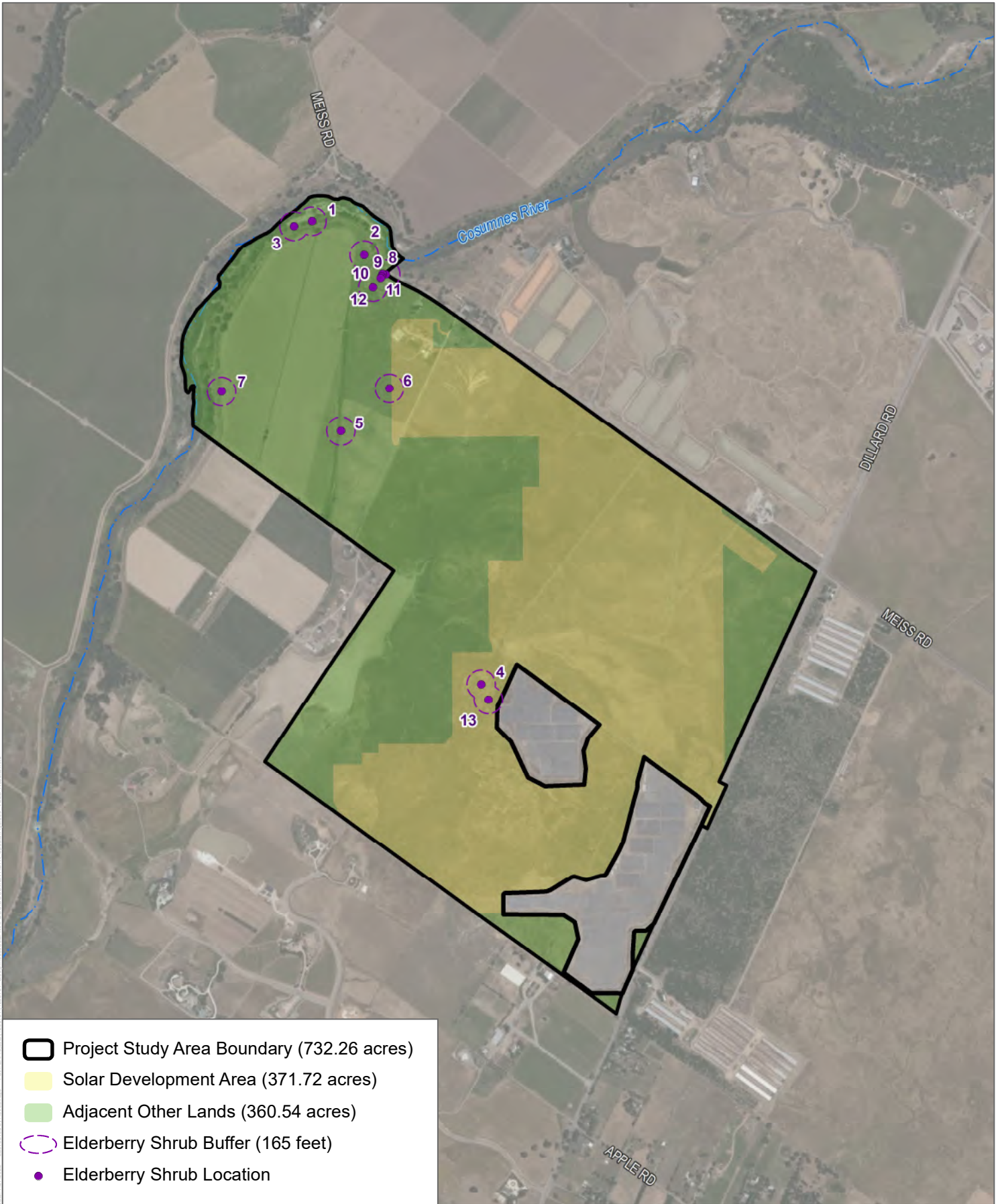


SOURCE: Bing Maps (2020), Sacramento County (2019), Environmentally Preferred Alternative Site Plan - DESRI (6/24/2022)

**FIGURE 8**



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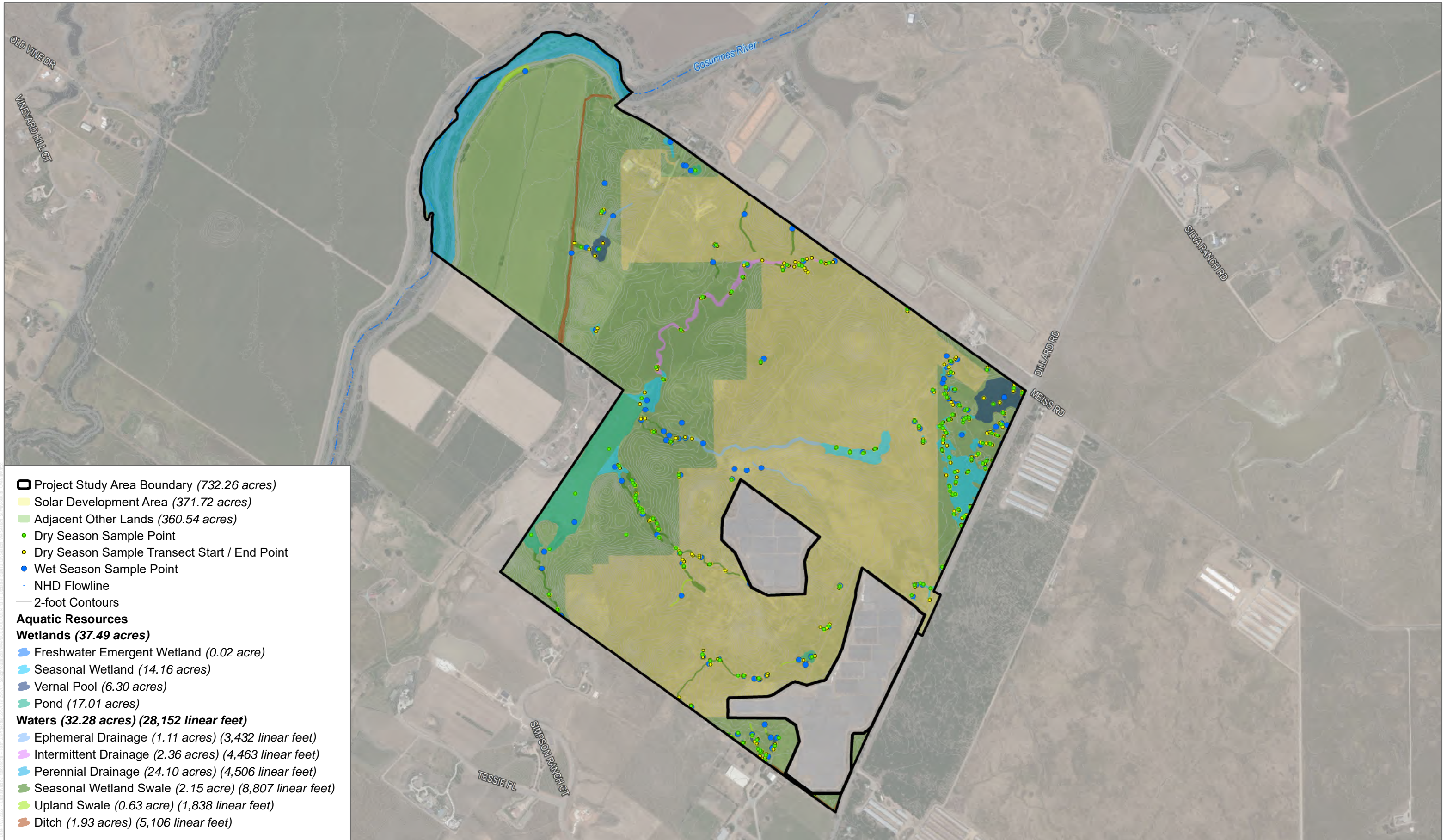
SOURCE: Bing Maps (2020), Sacramento County (2019), Environmentally Preferred Alternative Site Plan - DESRI (6/24/2022)

**FIGURE 9**

Valley Elderberry Longhorn Beetle Results  
 Biological Technical Report for the Sloughouse Solar Project

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SOURCE: Bing Maps (2020), Sacramento County (2019), Environmentally Preferred Alternative Site Plan - DESRI (6/24/2022)

**FIGURE 10**

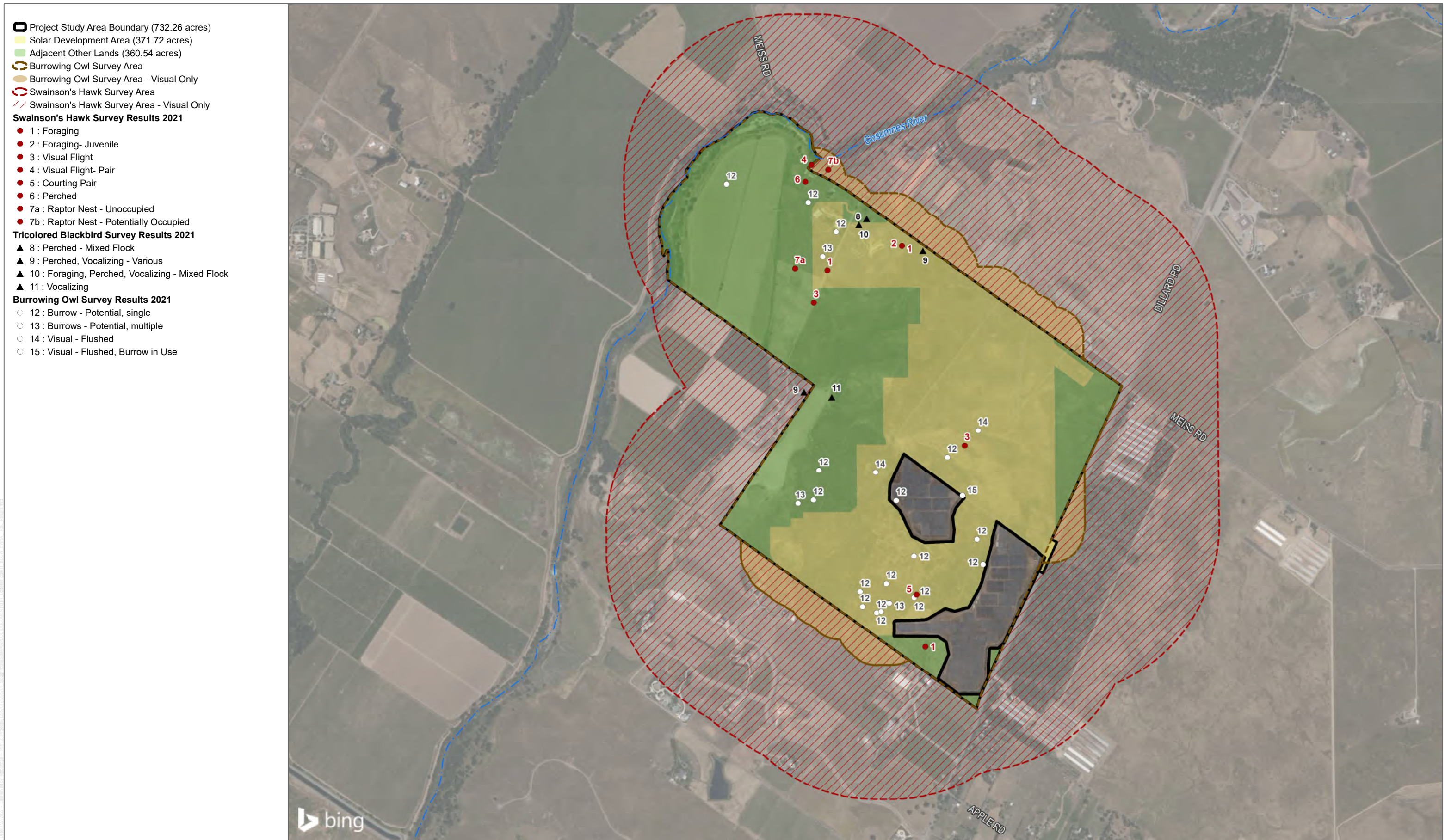
**Dry and Wet Season Large Listed Branchiopod Results**

Biological Technical Report for the Sloughhouse Solar Project



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SOURCE: Bing Maps (2020), Sacramento County (2019), Environmentally Preferred Alternative Site Plan - DESRI (6/24/2022)



FIGURE 11

Burrowing Owl , Swainson's Hawk, and Tricolored Blackbird Survey Results

Biological Technical Report for the Sloughhouse Solar Project



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## **Appendix A**

Swainson's Hawk and Other Raptor Foraging Use of  
Solar Array Fields within an Agricultural Landscape in  
Sacramento County, Year 2

# Swainson's Hawk and Other Raptor Foraging Use of Solar Array Fields within an Agricultural Landscape in Sacramento County

Year 2

November 2021



*Prepared for:*

**DUDEK**

*Prepared by:*

**ESTEP**



*Environmental  
Consulting*

**Swainson's Hawk and Other Raptor Foraging Use  
of Solar Array Fields within an Agricultural Landscape in  
Sacramento County**

**Year 2**

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November 2021

# Introduction

This report presents data from the second year of a study to evaluate the use of photovoltaic solar energy projects by Swainson's hawks (*Buteo Swainsoni*) and other raptors within an agricultural landscape in the Sacramento Valley.

## Background

Four photovoltaic solar energy projects were constructed in south Sacramento County in 2012. All occur within an agricultural landscape used by foraging raptors, including the state-listed Swainson's hawk. Because of its dependence on agricultural foraging habitats in the Central Valley, loss of suitable agricultural lands to urban development has been considered a potentially significant environmental impact on the Swainson's hawk pursuant to the California Environmental Quality Act (CEQA) (CDFG 1994). Since the early 1990s, impacts considered significant were usually mitigated through a compensatory process of acquisition, management, and preservation of replacement agricultural lands. This process was based initially on guidance provided by the California Department of Fish and Wildlife (CDFG 1994) and later in Sacramento County through an ordinance enacted in 2006 (Sacramento County 2006). Because neither the CDFG guidance nor the county ordinance addressed the relationship between land conversion and the status of the Swainson's hawk breeding population or differentiated between different types of land use conversion, but instead assumed significance pursuant to CEQA based on broadly defined habitat availability/species abundance relationships, the proponents of the four solar projects questioned the reliability of the existing process to require compensatory mitigation relative to the specific conditions of a photovoltaic solar project compared with other types of land conversion, mainly urban development. As a result, through consultation with the county and CDFW, a one-year study was undertaken to assess the use of the photovoltaic solar projects by Swainson's hawks and other raptors.

The initial study was completed in 2013 (Estep 2013) and results were presented to the county and CDFW staff. Despite the evidence of ongoing Swainson's hawk and other raptor use of the solar projects, CDFW determined that the evidence gathered during a single year was insufficient and that the project should remain subject to the earlier guidelines (CDFG 1994) and county ordinance, and with concurrence from Sacramento County, the request to reevaluate the need for and extent of compensatory mitigation was rejected.

In 2018, the South Sacramento County Habitat Conservation Plan was approved and subsequently became the framework for ongoing mitigation and conservation efforts in Sacramento County, superseding earlier CDFW guidance and the county ordinance to address land conversion impacts to Swainson's hawk related to most development projects. However, solar energy projects were not included in the HCP as covered projects, and thus remain under the purview of independent CEQA review by Sacramento County to determine the significance of the land use conversion and the need for compensatory mitigation.

In 2021, Bona Terra Energy, LLC proposed construction of additional photovoltaic projects in South Sacramento County. Aware of the efforts in 2013 to investigate ongoing use of solar



projects and the resulting unsuccessful negotiations with the county and CDFW, they decided to undertake a second year of study in order to provide additional data to supplement the results from the initial 2013 study. If results were similar to the 2013 study, this additional information would again be presented to the county and CDFW in an effort to reassess the need for and extent of compensatory mitigation. This report summarizes the results of this additional research.

## **Summary of 2013 Results**

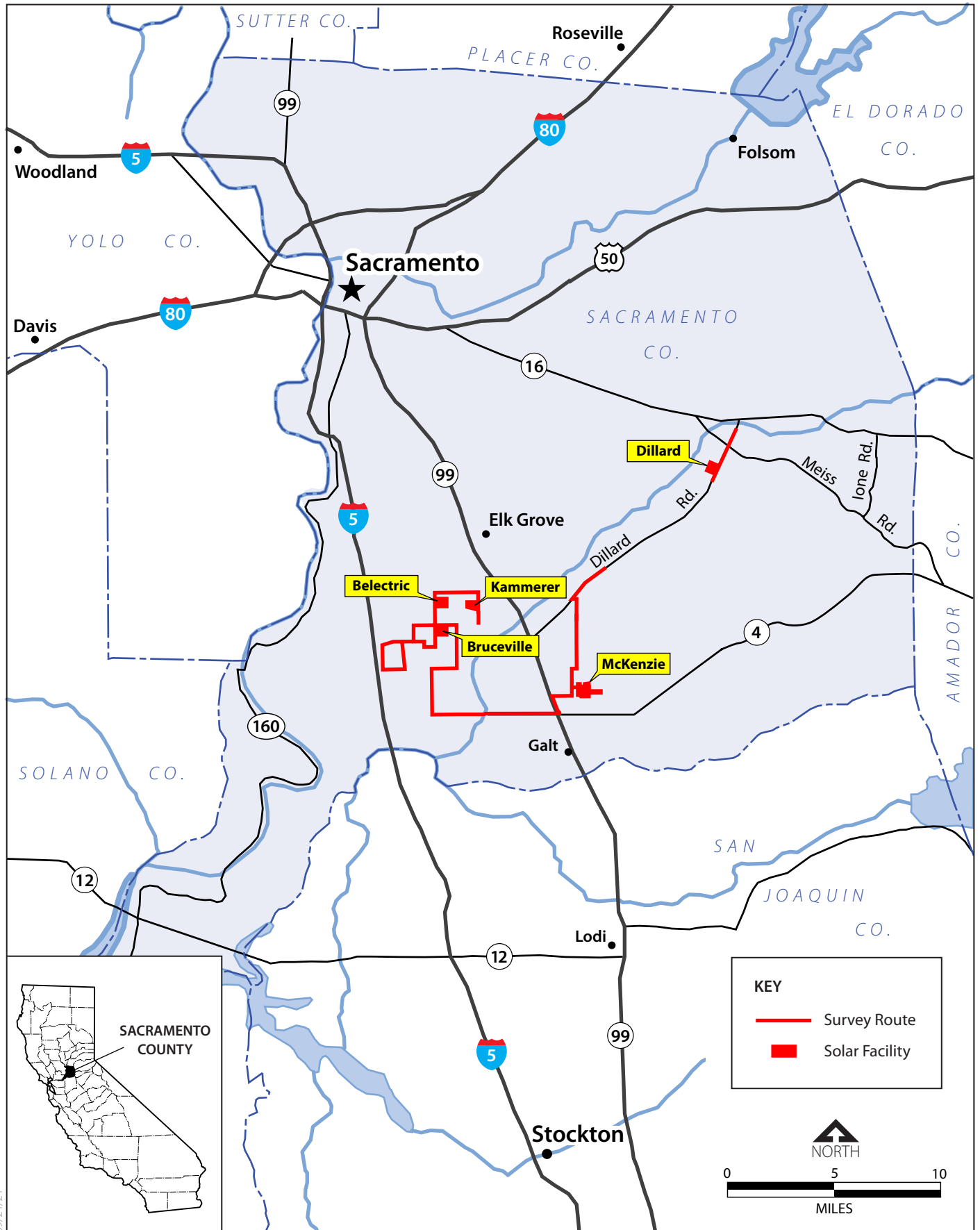
The 2013 study, which is largely repeated in 2021, poses a simple question: Do Swainson's hawks and other raptors use photovoltaic solar arrays for foraging, and if so, within a diverse agricultural landscape, to what extent are they, and other land cover types, used in proportion to their availability? The results documented use by Swainson's hawk, red-tailed hawk (*Buteo jamaiscensis*), American kestrel (*Falco sparverious*), and northern harrier (*Circus hudsonius*), and indicated that Swainson's hawks used solar array fields at a significantly greater frequency than would be expected relative to their availability, suggesting that solar array fields were being selected by foraging Swainson's hawks. This result was also found for American kestrels. The report concluded that integrated within a diverse agricultural landscape, the presence solar array fields of moderate size and that maintain a suitable grassland substrate are unlikely to have a negative affect on Swainson's hawk distribution or abundance.

## **Location**

The four solar projects installed in 2012 (referred to as Bruceville, Kammerer, McKenzie, and Dillard projects) were all used in this study. A fifth solar project (Belectric project), installed earlier, was also included. The study area is located at and in the vicinity of these five projects in South Sacramento County. All are south of the City of Sacramento and east of Interstate 5 (Figure 1). The Kammerer, Bruceville, and Belectric project sites are immediately south of the City of Elk Grove between Interstate 5 and State Route 99. The McKenzie project site is just north of the City of Galt and just east of State Route 99, and the Dillard project is further northeast, just south of State Route 16 (Figure 1).

## **Description of the Solar Projects**

The four solar projects installed in 2012 range in size from approximately 45 acres to 200 acres and consist of an array of photovoltaic solar panels installed in east-west-facing rows. The earlier-installed 140-acre Belectric project is similarly designed with northeast-southwest-facing rows. The panels are connected uniformly in rows along a solar tracker frame that maintains conformity and allows the panels to pivot along a single axis as they track the sun. The trackers are set into the ground using 4-inch galvanized steel poles set in 1-foot concrete pads spaced approximately 10 feet apart along the row. The 8-foot-long solar panels are installed onto the frame with a 2-foot minimum clearance from the ground to panel edge at a 45-degree angle, the maximum tilt angle. The total height of the structure reaches a maximum of approximately 10 feet at full 45-degree tilt. Panel rows are spaced 20 feet apart from pole to pole. With 8-foot-long panels, this leaves 12 feet of open space between each row at horizontal, and slightly larger open space as the trackers angle. The collection systems are underground with the exception of grid tie



09/21/21

**Figure 1**  
**Regional Location of Survey Route and Photovoltaic Solar Facilities**

inverters, which are spaced uniformly throughout each project site. Power is delivered to an onsite solar substation. Each project also includes internal gravel access roads and an 8-foot-high chain link security fence around the perimeter.

A management plan was prepared for each of the sites constructed in 2012, which includes the establishment of grasses throughout the project sites, including beneath and between the trackers and solar panels. The grasses are maintained at a low (4 to 12 inches) height through a sheep grazing program that periodically rotates between the sites as needed. The grass ground cover is designed to encourage the establishment of rodent populations to promote raptor use of the site as well as to provide for rodent refugia to aid in the reestablishment of rodent prey populations on adjacent farmlands following cultivation. The earlier-installed Belectric project also includes a similar grass substrate.

### **Differentiating the Structure and Management of Solar Arrays from Cultivated Habitats**

The extent to which raptors are likely to use solar arrays compared with cultivated fields is largely a function of their design and management as well as the foraging behavior of each species. For example, Swainson's hawks are highly active aerial hunters. Typical foraging behavior is a relatively low (less than 100 meters) circling flight above suitable foraging habitat. They avoid fields with tall or dense vegetation because this condition reduces visibility and access to prey (Bechard 1982, Estep 2009). As a result, at first glance it would seem that a solar array, like a vineyard or orchard, would not provide suitable foraging conditions. Swolgaard et al. (2007) found some use of vineyards by foraging Swainson's hawks, but not to the extent of other crops and land cover types in the surrounding landscape. Still, the Swolgaard et al. (2007) study revealed that Swainson's hawks are not entirely averse to hunting in these conditions.

A typical solar array, however, has greater separation between rows than do most vineyards. For most photovoltaic solar projects, including the five included in this study, at least 60 percent of the area within the solar array remains potentially available at any given time. Most projects also retain open areas between array cells, along access roads, and between the arrays and the perimeter fence. Management of the substrate is also essential to ensure that the project supports available rodent prey for foraging raptors. In order to encourage a sustainable source of small rodent prey, a grass substrate is maintained year-round throughout the project area (Plate 1). Sheep grazing is used to control vegetation height and density, which also encourages accessibility of raptors to rodent prey (Plate 2). Because the grass substrate is maintained, it also functions as a stable source of recolonization of rodent populations into adjacent fields, which may be subject to seasonal fluctuations of rodent populations resulting from the planting/harvesting regime. In some cases, it is also possible to apply the principals of agrivoltaics (Goetzberger and Zastrow, 1982; Dolezal et al. 2021), the practice of agriculture in and around solar PV facilities, by including a mixture of grasses, forbs, and a variety of pollinator plant species. In addition to further encouraging rodent prey populations, this deep-rooted system helps save water, holds and improves the topsoil on-site, and encourages pollinators, which can benefit neighboring crops.



Plate 1. Solar array with grassland substrate.



Plate 2. Sheep grazing the grasslands at the Bruceville solar project site, 2021.



## **Physiography and Land use**

The surrounding land use is entirely agricultural, consisting of a combination of irrigated pasture, dry pasture, and irrigated cropland. Dominant crop types in the area include oat hay, alfalfa, corn, wheat, and vineyards. Agricultural land use has changed since the 2013 study. Orchards, a land cover providing unsuitable foraging habitat for most raptors, have increased substantially, replacing row and grain crops, and potentially reducing overall use of the landscape by foraging raptors. Urbanization from the City of Elk Grove has also expanded southward toward the survey route. Although these dense urban developments were not included within the survey area, their increasingly close proximity likely affects raptor use of the surrounding area and thus may influence occurrences within the survey area.

Rural urban areas also occur throughout the area including farm and ranch residences and related facilities and dairies. The landscape is flat with virtually no topographic relief other than seasonal and perennial drainages, with the exception of the low grassland hills surrounding the Dillard project and to a lesser extent on the open grassland/rangelands of the Cosumnes River Preserve, north of the McKenzie project. Trees occur along riparian corridors, roadsides, and field borders, and around farm and ranch residences. These trees provide nesting habitat for several of the raptor species in the study area including Swainson's hawk, red-tailed hawk, red-shouldered hawk (*Buteo lineatus*), white-tailed kite (*Elanus leucurus*), American kestrel, and great-horned owl (*Bubo virginianus*).

## **Distribution and Foraging Behavior of Nesting Swainson's Hawks and other Raptor Species in South Sacramento County**

Because of its status as a state-threatened species and its association with mitigation and conservation actions in the Central Valley, our target species for this study was the Swainson's hawk. However, all raptor species were recorded during the survey. A brief description of those species known to occur in the vicinity of the study area follows.

The Swainson's hawk is a medium-sized buteo most often characterized by its long, narrow, and tapered wings held in flight in a slight dihedral shape. The body size is somewhat smaller, thinner, and less robust than other buteos, although the wings are at least as long as other buteos. This body and wing shape allow for efficient soaring flight and aerial maneuverability, important for foraging, which Swainson's hawks do primarily from the wing, and during courtship and inter-specific territorial interactions (Plate 3). The species nests in trees along riparian corridors, field edges, roadsides, isolated trees, and around rural homesites; and forages in compatible cultivated landscapes and grasslands.



*Plate 3. Adult Swainson's hawk showing the long, tapered wings that allow for efficient soaring and flight maneuverability.*

The Swainson's hawk occurs throughout the undeveloped portions of Sacramento County. Surveys have been conducted throughout Sacramento County for several decades resulting in a substantial number of breeding records (California Natural Diversity Data Base 2021, Estep 2007, 2009a, 2012). Surveys conducted in 2006 reported a total of 188 active breeding sites in Sacramento County south of Jackson Highway (State Route 16) (Estep 2007). More recent surveys (Estep 2009a, 2012) reported additional active breeding sites within and south of the City of Elk Grove. Additional nesting sites are reported in eBird, a publicly-accessed online repository of bird occurrence data. Several additional nest sites were also reported during road transect surveys conducted for this study, one of which is located within the substation of the Kammerer solar project site (Plates 4 and 5).



Plate 4. Swainson's hawk nest in the Kammerer substation, 2021.



Plate 5. Swainson's hawk nest at Kammerer solar site, 2021.

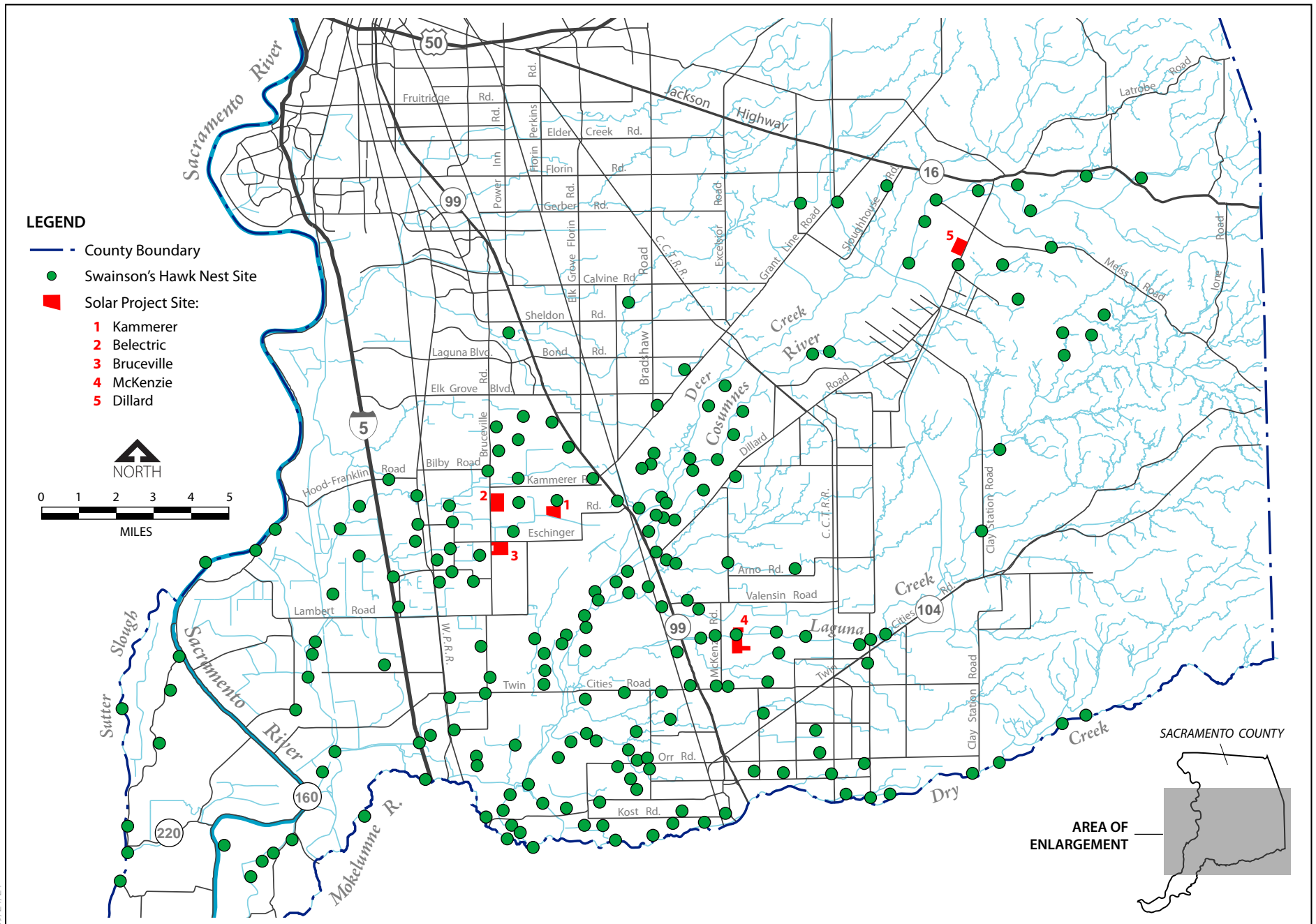
Figure 2 illustrates the locations of reported Swainson's hawk nests in South Sacramento County in the vicinity of the solar project sites. The highest nesting density was found in the interior of the county where the land use is predominantly irrigated cropland and irrigated pastureland.

In the Central Valley, the distribution of the red-tailed hawk is similar to the Swainson's hawk. There is substantial overlap in the habitat associations of the two species. Similar in size, but more robust in body than the Swainson's hawk, red-tailed hawks are somewhat less-active hunters, often hunting from perches. Distribution in the vicinity of the study area is similar to the Swainson's hawk, and although red-tailed hawks are more common range-wide, they are less abundant than Swainson's hawks in the irrigated agricultural landscape of the Central Valley (Estep 2007, 2008, 2012, 2020, Estep and Dinsdale 2012).

Red-shouldered hawks are distributed throughout the Central Valley, and are found primarily in riparian and other woodland habitats. As a result, their distribution is less uniform across the landscape compared with Swainson's hawk and red-tailed hawk, and although underreported, they are also less common. Red-shouldered hawks forage primarily in woodlands and along woodland edges, but will opportunistically hunt in open agricultural and grassland habitats.

White-tailed kites also occur throughout the Central Valley, using similar nesting and foraging habitats as Swainson's hawk and red-tailed hawk. However, they are substantially less common and more specialized in their use of foraging habitats and their hunting behavior, particularly their use of kiting or hovering technique while searching for rodent prey.

American kestrel is also distributed throughout the Central Valley, and although populations fluctuate, the species is relatively common and ubiquitous in agricultural landscapes. Kestrels also nest in similar riparian and other woodland habitats, in tree rows, or in small woodlots or in



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SOURCE: Estep 2021.

**Figure 2**  
**Swanson's Hawk Distribution in the Vicinity of the Solar Project Sites**



trees surrounding rural farm houses. They typically hunt from a perch – often seen along utility line corridors – or using a hovering technique similar to white-tailed kite.

Northern harrier is a ground-nesting raptor also commonly observed in agricultural and grassland landscapes in the Central Valley that uses a low-elevation coursing flight technique while hunting for small rodents. Great-horned owl, with a similar Central Valley distribution, nests in riparian and other woodland habitats and hunts, usually from a perch, in cultivated fields and grasslands. Burrowing owl, also a ground-nesting species, occurs primarily in open grassland habitats but is also occasionally found in cultivated landscapes. Cooper's hawk (*Accipiter cooperii*) is uncommonly found in riparian and other woodland habitats in the Central Valley where it uses a meandering flight pattern under the canopy to surprise prey. However, like all raptors in the altered landscape of the Central Valley, they will opportunistically hunt in open cultivated or grassland habitats.

## **Purpose**

This study was designed to meet the following objectives (1) examine how and the extent to which Swainson's hawks and other raptors forage on or otherwise use the solar facilities; and (2) evaluate raptor use of solar facilities and other available land cover types relative to their availability on the landscape. Through this investigation, the purpose was to provide a general estimation of the use of the solar project facilities compared to other available land cover types and to provide data that can be used to assess the potential for changes in the distribution and abundance of Swainson's hawks resulting from the presence of moderately-sized solar facilities within an otherwise diverse, expansive, and dynamic agricultural landscape.

## **Methods**

### **Strip Transect Road Surveys**

The strip transect road survey method (Fuller and Mosher 1987) was used to evaluate relative foraging use of different land cover types, including the solar arrays. The transect route included the same 26-mile route used during the 2013 study, but included an additional 14 miles for a total route distance of approximately 40 miles. The survey route was selected based on the following:

- Incorporating the five solar facilities into the design
- Road/vehicle accessibility
- Visibility
- Road safety
- Diversity of land cover types

The survey area extended 600 feet from each side of the road for a total width of 1,200 feet. Initially, all land cover types were mapped and classified along the survey route. To conduct the survey, the surveyor slowly drove at a consistent pace between 10 and 15 mph, stopping as needed to identify and record raptors and raptor behavior. Recorded behaviors included:

- Circling below 100 meters
- Soaring below 200 meters
- Flying through the survey area below 200 meters
- Kiting/Hovering
- Perching (adjacent poles/trees/fences)
- Standing on ground
- Prey capture attempt
- Prey capture successful
- Prey capture unsuccessful
- Aerial foraging

The surveyor recorded data as raptors were observed within the 1,200-foot-wide transect survey area. Land cover type and status, including vegetation height, and farming activity were recorded for each occurrence. Start times were variable in order to account for differences in foraging use patterns. Using this method, a reliable statistical analysis can be performed that measures habitat use as a proportion of availability. In other words, it determines whether a habitat type is used more or less than expected relative to its availability. In this way we can evaluate the relative use of all cover types in the survey area, including the solar array fields.

A survey form along with an accompanying data code sheet and field maps with the route and land cover types illustrated were used to record observational and related data while in the field. Surveys were conducted during daylight hours and were not conducted during severe weather events such as heavy rainfall, winds greater than 20 mph or foggy conditions. Surveys were conducted twice weekly by the same surveyor between April 19 and August 31, 2021 for a total of 39 surveys.

**Habitat Mapping.** Land cover types were mapped and characterized in the field along the survey route on 7.5-minute USGS quadrangle maps. Current 2021 land use was documented in the field according to the land cover type categories listed below.

- Oats
- Alfalfa
- Dry Pasture
- Irrigated pasture
- Ruderal/Developed
- Vineyard
- Orchard
- Grassland
- Corn
- Tilled
- Solar Array field
- Idle/Fallow
- Riparian/Wetland
- Wheat

Field boundaries were recorded, confirmed, or adjusted as needed on USGS base maps. Tilled was included separately because some fields were tilled and unplanted for approximately one-half of the survey period before being planted. Rural residences and their surrounding footprint (e.g., barns, out buildings, yards, and equipment storage areas), adjacent ruderal areas, and other agricultural facilities, mainly dairies, were combined into a single category – Ruderal/Developed. Following the initial field mapping of habitat/land use categories, the data were then re-mapped using aerial photos to confirm field boundaries.

These maps were then converted to graphic maps using Adobe Illustrator. Habitat/land use cover type acreages were calculated from the graphic maps using a plug-in filter from Telegraphics Inc. While this process provided a reasonably accurate representation of land cover types along the survey route, it did not exclude interior farm roads and other edge features. As a result, the acreage totals may exceed the actual acreage for some types. However, this was considered to have a negligible effect on the total calculations or the relative abundance of the various types.

Several crop type rotations occurred during the survey including wheat, oats, and tilled fields rotating to corn. These rotations or conversions occurred at approximately the mid-point of the survey. To account for these changes and to satisfy the assumption that habitat availability is constant throughout the study (Manly et al. 2002), we used the same approach as Swolgaard et al. (2008) by tallying the areas of all fields that changed crops midseason, dividing the values in half, and assigning those values to each habitat.

**Analysis.** Documented raptor occurrences and acreages of land cover types were compiled and proportions of land cover types and occurrences within each land cover type calculated. As in the 2013 study, of the nine species documented during the survey, only Swainson's hawk, red-tailed hawk, and American kestrel had sufficient occurrences to be included in the statistical analysis. The null hypothesis stated that Swainson's hawks and other raptor species used each habitat for foraging in proportion to its availability in the survey area. Therefore, only behaviors that represented foraging were included in the analysis. To ensure consistency with the 2013 results, foraging behaviors for Swainson's hawk included circling below 100 meters, the typical foraging behavior of Swainson's hawks, kiting/hovering, and prey capture attempts. Perching behavior was initially excluded because the species does not typically hunt from a perch. However, in 2021, additional calculations were run that included perching as a foraging behavior to account for observed behavioral changes in Swainson's hawk use of solar array fields since 2013. Perching was included as a foraging behavior for red-tailed hawk and American kestrel, species that often hunt from perches.

Hypothesis testing for selection of foraging habitat consisted of a chi-square test for goodness of fit, followed by chi-square testing of individual types to determine if use was disproportionate to availability and whether it was positively or negatively correlated. While this approach may be regarded as very conservative compared with other more robust statistical tests used in habitat use/availability studies, it was considered appropriate to address the rather narrow objectives (use of solar array fields) of this study.

## Stationary Observation Point Surveys

In addition to the strip transect road surveys, surveys were also conducted from stationary observation points around the perimeter of four of the five solar arrays (not including the Belectric project). The purpose of these surveys was to document additional use of the solar fields by all raptor species and to increase the opportunity to record prey captures or prey capture attempts, which are generally less frequently observed during road transect surveys. Stationary observation point surveys were conducted at the four solar projects once per week in a rotational sequence between April 22 and August 25 for a total of 19 separate four-hour observation periods totaling 76 hours of observation.

## Results and Discussion

### Land Cover Types within the Survey Area

Table 1 presents the types and corresponding acreages of land cover within the survey area. Figures 3a through 3h illustrate the distribution of these types along the survey route. The land use along the approximately 40-mile route and throughout much of the south Sacramento County area consists of a mixture of grazing lands in the form of both irrigated and non-irrigated pasturelands and cultivated lands. Of the 5,501 acres within the survey area, 79 percent are active agricultural types including irrigated and non-irrigated pasturelands (21.7 percent), seasonally or annually cultivated crops (28.8 percent), semi-perennial hays (12.2 percent), and perennial crops (16.1 percent). The remaining 21 percent of the land cover consists of ruderal/developed (9.7 percent), uncultivated grassland (6.2 percent), riparian (1.4 percent), and solar array fields (3.7 percent). Two primary changes occurred since the 2013 survey: the expansion of orchards – largely at the expense of irrigated pasture acreage, and the increase in grassland, which is due mainly to expanding the survey route through a portion of the Cosumnes River preserve (Table 1).

**Table 1. Land use types and acreages in the survey area, 2021 and 2013.**

| Land Cover Type   | Acres | Percent of Total<br>2021 | Percent of Total<br>2013 |
|-------------------|-------|--------------------------|--------------------------|
| Oats              | 844   | 15.3                     | 19.2                     |
| Alfalfa           | 672   | 12.2                     | 10.6                     |
| Dry Pasture       | 613   | 11.1                     | 7.2                      |
| Irrigated Pasture | 585   | 10.6                     | 23.6                     |
| Ruderal/Developed | 531   | 9.7                      | 10.8                     |
| Vineyard          | 495   | 9.0                      | 6.5                      |
| Orchard           | 393   | 7.1                      | 0                        |
| Grassland         | 340   | 6.2                      | 1.3                      |
| Corn              | 283   | 5.1                      | 4.6                      |
| Tilled            | 235   | 4.3                      | 4.7                      |
| Solar Array Field | 206   | 3.7                      | 6.9                      |
| Idle/Fallow       | 159   | 2.9                      | 0.2                      |
| Riparian/Wetland  | 77    | 1.4                      | 1.1                      |
| Wheat             | 68    | 1.2                      | 3.3                      |
| Total             | 5,501 | 100                      | 100                      |



**Seasonally or Annually Cultivated Crops.** Within the survey area, these include oat hay, corn, and wheat crops, much of which is grown as silage to support local dairy operations. Tilled lands are cultivated lands that are between plantings and were included as a separate type because most of these areas were in a tilled condition for approximately one-half of the survey period before being planted to corn, which is often planted later in the season. These crops have variable suitability as foraging habitat depending on vegetation height and density, which influences prey accessibility (Bechard 1982, Estep 2009). Of the types found in the survey area, oat hay likely provides the highest value due to large rodent prey populations and relatively early harvest, which increases prey accessibility. After cutting, oat fields may continue to provide foraging value if the field is not disked and prepared for the following planting.

**Semi-Perennial Hays.** These are alfalfa hay fields that remain uncultivated for at least 3 consecutive years. During the spring and summer months, alfalfa fields are mowed approximately once per month and may be irrigated as frequently as once per week. This is considered a high value foraging crop type for Swainson's hawk and other raptors because of the lack of seasonal or annual cultivation and because the regular mowing and irrigation operations increase prey accessibility (Estep 2009).

**Irrigated and Non-irrigated Pasturelands.** Irrigated pastures are planted with grasses (e.g., bromes, ryegrass, clovers), irrigated, and grazed by livestock. They may be periodically cultivated and replanted. Non-irrigated, or dry pastures are uncultivated natural grasslands that are grazed by livestock. Both types are used by Swainson's hawks and other foraging raptors but are considered to have only moderate value due to low rodent prey populations compared to some cultivated lands (Estep 1989, 2009).

**Perennial Crops.** Perennial crops include vineyards and orchards. Although some use by Swainson's hawks has been documented (Swolgaard et al 2008), vineyards are generally considered to have low foraging value because as they mature, the vegetation becomes tall and dense and largely precludes foraging access (Estep 1989). Orchards, primarily nut orchards, have expanded throughout the region and in 2021 represent 7.1 percent of the land cover in the survey area, up from 0 percent in 2013. This land cover is considered unsuitable for Swainson's hawk foraging due to the dense canopy and inaccessibility to the ground.

**Urban/Ruderal.** Rural farm and ranch residences and associated out-buildings, dairy facilities, and other farming and ranching facilities occur along the survey route. Ruderal weedy or grassy patches also occur within or adjacent to some of the developed areas. Although these areas provide relatively little foraging value, they often provide perching habitat or nest sites where suitable trees or utility poles occur around their perimeter.

**Uncultivated Grassland and Riparian.** The survey route crosses the flood plain of the Cosumnes River where a small amount of riparian and associated uncultivated grassland were documented. The riparian forest in this area supports high value nesting habitat but would not typically be used for foraging by raptor species documented during the survey with the exception of red-shouldered hawk and Cooper's hawk. The small patches of grassland may be used by foraging raptors, but usually do not support the prey abundance and accessibility compared with open, cultivated lands. The expanded route for 2021 included additional open grassland through

the Cosumnes River Preserve and in the vicinity of the Dillard project at the eastern terminus of the route.

**Solar Array Fields.** A description of the five solar fields is provided in the Introduction section.

## Strip Transect Road Surveys

Data on species occurrence, land cover, and behavior are compiled into the following tables, which provide insight into the use of solar fields compared with other land cover types by each raptor species, and inform the statistical outcome presented in the chi-square value tables from which the relative importance of each land cover can be inferred.

A total of 1,029 raptor occurrences were documented within the survey area. Three of the seven documented species, Swainson’s hawk, red-tailed hawk, and American kestrel comprised 92.4 percent of the total occurrences. Swainson’s hawk comprised 30.4 percent of the total occurrences (Table 2), down from 38.5 percent in 2013, speculatively due to orchard expansion in the region. In 2021, red-tailed hawks were the most commonly documented species in the survey area at 39.8 percent, up from 31.2 percent in 2013.

**Table 2. Species occurrences documented within the survey area, 2021.**

| Species             | Number of Occurrences | Percent of Total |
|---------------------|-----------------------|------------------|
| Red-tailed hawk     | 410                   | 39.8             |
| Swainson’s hawk     | 313                   | 30.4             |
| American kestrel    | 228                   | 22.2             |
| Red-shouldered hawk | 42                    | 4.1              |
| White-tailed kite   | 20                    | 1.9              |
| Osprey              | 5                     | 0.5              |
| Cooper’s Hawk       | 5                     | 0.5              |
| Northern harrier    | 4                     | 0.4              |
| Great-horned Owl    | 2                     | 0.2              |
| Total               | 1,029                 | 100              |

Table 3 shows the number of occurrences by species within each land cover type. Alfalfa was associated with the largest proportion of all raptor occurrences at 23.6 percent, and the largest proportion of occurrences for red-tailed hawk (21.2 percent), Swainson’s hawk (27.2 percent), American kestrel (26.3 percent), and red-shouldered hawk (23.8 percent). Dry pasture, irrigated pasture, solar fields, and oats also supported relatively high overall raptor occurrences, particularly red-tailed hawks, Swainson’s hawks, and American kestrels.

Although solar fields made up only 3.7 percent of the survey area (Table 1), 8.7 percent of all raptor occurrences and 11.2 percent of all Swainson’s hawk occurrences were documented in solar fields. Nearly 13 percent of all American kestrel occurrences and 4.6 percent of all red-tailed hawk occurrences were in solar fields.

**Table 3. Species occurrences documented within each land cover type, 2021.**

| Land Cover Type    | Species |      |      |      |      |      |      |      |      | Total | % of Total |
|--------------------|---------|------|------|------|------|------|------|------|------|-------|------------|
|                    | RTHA    | SWHA | AMKE | RSHA | WTKI | OSPR | NOHA | COHA | GHOW |       |            |
| Alfalfa            | 87      | 85   | 60   | 10   | 1    |      |      |      |      | 243   | 23.6       |
| Dry pasture        | 56      | 34   | 11   | 3    | 1    |      |      |      |      | 105   | 10.2       |
| Irrigated. pasture | 53      | 20   | 15   | 5    |      |      |      |      |      | 93    | 9.0        |
| Solar field        | 19      | 35   | 29   | 4    |      |      |      | 2    | 1    | 90    | 8.7        |
| Oats               | 14      | 33   | 32   |      | 3    |      |      |      | 1    | 83    | 8.1        |
| Vineyard           | 48      | 16   | 7    | 3    |      |      | 2    | 2    |      | 78    | 7.6        |
| Corn               | 24      | 16   | 25   | 2    |      |      |      | 1    |      | 68    | 6.6        |
| Field edge*        | 13      | 15   | 16   | 8    | 6    | 5    |      |      |      | 63    | 6.1        |
| Tilled             | 11      | 25   | 20   | 3    | 1    |      | 1    |      |      | 61    | 5.9        |
| Idle/Fallow        | 27      | 2    | 6    |      | 8    |      |      |      |      | 43    | 4.2        |
| Orchard            | 38      | 4    | 1    |      |      |      |      |      |      | 43    | 4.2        |
| Wheat              | 4       | 16   | 5    |      |      |      |      |      |      | 25    | 2.4        |
| Grassland          | 15      | 5    | 1    |      |      |      | 1    |      |      | 22    | 2.1        |
| Riparian/wetland   | 1       | 2    |      | 4    |      |      |      |      |      | 7     | 0.7        |
| Ruderal/Develop    | 0       | 5    |      |      |      |      |      |      |      | 5     | 0.5        |
| Total              | 410     | 313  | 228  | 42   | 20   | 5    | 4    | 5    | 2    | 1,029 | 100        |

SWHA = Swainson’s hawk; RTHA = red-tailed hawk; AMKE = American kestrel; NOHA = northern harrier; WTKI = white-tailed kite; RSHA = red-shouldered hawk; OSPR = osprey; COHA = Cooper’s hawk, GHOW = great-horned owl.

\*Field or road edge was not a mapped habitat type, so these data are not included in the statistical analysis.

Species occurrences by behavior type are presented in Table 4. Perched occurrences were most common followed by circling below 100 meters, and together comprised nearly 82 percent of all occurrences. A total of 831 occurrences (81 percent) were considered potential foraging occurrences (Table 4).

**Table 4. Behaviors documented by species. Potential foraging behaviors are highlighted.**

| Behavior Code | Species |      |      |      |      |      |      |      |      | Total | % of Total |
|---------------|---------|------|------|------|------|------|------|------|------|-------|------------|
|               | RTHA    | SWHA | AMKE | RSHA | WTKI | COHA | OSPR | NOHA | GHOW |       |            |
| P             | 304     | 122  | 145  | 31   | 14   | 2    | 3    |      | 1    | 622   | 60.4       |
| C             | 81      | 122  | 10   | 4    | 2    |      | 1    |      |      | 220   | 21.4       |
| F             | 13      | 14   | 24   | 4    | 3    | 3    | 1    | 3    | 1    | 66    | 6.4        |
| G             | 1       | 28   | 1    | 1    |      |      |      |      |      | 31    | 3.0        |
| CS            | 1       | 9    | 12   | 1    |      |      |      |      |      | 23    | 2.2        |
| K             |         | 5    | 14   |      | 1    |      |      |      |      | 20    | 1.9        |
| CU            | 2       | 3    | 11   |      |      |      |      |      |      | 16    | 1.6        |
| S             | 5       | 9    |      |      |      |      |      | 1    |      | 15    | 1.5        |
| CA            | 3       | 1    | 9    | 1    |      |      |      |      |      | 14    | 1.4        |
| AF            |         |      | 2    |      |      |      |      |      |      | 2     | 0.2        |
| Total         | 410     | 313  | 228  | 42   | 20   | 5    | 5    | 4    | 2    | 1029  | 100        |

SWHA = Swainson’s hawk; RTHA = red-tailed hawk; AMKE = American kestrel; NOHA = northern harrier; WTKI = white-tailed kite; RSHA = red-shouldered hawk; OSPR = osprey. P-perching; C-circling below 100m; F-flying through below 200m; G-on the ground; CS-successful prey capture; K-kiting/hovering; CU-unsuccessful prey capture; S-soaring below 200m; CA-prey capture attempt; AF-aerial foraging.

Table 5 summarizes all raptor behaviors by land cover type. Tables 6, 7, and 8 show the behaviors associated with each occurrence in each land cover type for the Swainson’s hawk, red-tailed hawk, and American kestrel, respectively. Swainson’s hawks (Table 6) generally spend less time perching, particularly while foraging, than do red-tailed hawks and American kestrels, species that often hunt from perches. Typical hunting behavior of Swainson’s hawk is a circling

flight at an altitude less than 100 meters. Nearly 40 percent of all Swainson’s hawk occurrences were of circling flights below 100 meters. The proportion of perching occurrences (39%) was similar (up from 29% in 2013); however, in contrast, the largest proportion of Red-tailed hawk and American kestrel occurrences (74 percent and 64 percent, respectively) were of perching individuals (Tables 7 and 8).

**Table 5. All raptor behaviors by land cover type**

| Land Cover Type   | Behaviors |    |     |    |    |    |    |    |    |    | Total |
|-------------------|-----------|----|-----|----|----|----|----|----|----|----|-------|
|                   | P         | S  | C   | F  | CA | CS | CU | G  | K  | AF |       |
| Oats              | 48        | 2  | 23  | 1  |    |    | 3  | 1  | 5  |    | 83    |
| Alfalfa           | 141       | 2  | 39  | 9  | 5  | 12 | 8  | 18 | 9  |    | 243   |
| Dry pasture       | 66        | 1  | 22  | 8  | 1  | 2  | 1  | 4  |    |    | 105   |
| Irrigated pasture | 59        | 4  | 17  | 5  | 1  | 3  | 1  | 2  |    | 1  | 93    |
| Ruderal/Developed | 4         |    | 1   |    |    |    |    |    |    |    | 5     |
| Vineyard          | 44        | 2  | 26  | 6  |    |    |    |    |    |    | 78    |
| Orchard           | 35        |    | 8   |    |    |    |    |    |    |    | 43    |
| Grassland         | 12        |    | 7   | 2  | 1  |    |    |    |    |    | 22    |
| Corn              | 44        | 1  | 13  | 6  |    | 1  | 2  |    |    | 1  | 68    |
| Field edge*       | 38        |    | 13  | 11 |    |    |    |    | 1  |    | 63    |
| Tilled            | 35        |    | 16  | 5  |    | 1  |    | 4  |    |    | 61    |
| Solar field       | 51        |    | 22  | 10 | 4  | 2  | 1  |    |    |    | 90    |
| Idle/fallow       | 32        |    | 7   | 2  | 2  |    |    |    |    |    | 43    |
| Riparian/Wetland  | 4         |    | 1   | 1  |    |    |    |    | 1  |    | 7     |
| Wheat             | 6         | 3  | 8   |    |    | 2  |    | 2  | 4  |    | 25    |
| Total             | 619       | 15 | 223 | 66 | 14 | 23 | 16 | 31 | 20 | 2  | 1029  |

P = perching; S = soaring below 200 m; C = circling below 100 meters; F = Flying below 200 meters; CA = prey capture attempt; CS = prey capture successful; CU = prey capture unsuccessful; G = standing on the ground; K = kiting/hovering, AF = aerial foraging. \*Field or road edge was not a mapped habitat type, so these data are not included in the statistical analysis.

**Table 6. Swainson’s hawk behaviors by land cover type**

| Land Cover Type   | Behaviors |   |     |    |    |    |    |    |   |    | Total |
|-------------------|-----------|---|-----|----|----|----|----|----|---|----|-------|
|                   | P         | S | C   | F  | CA | CS | CU | G  | K | AF |       |
| Oats              | 9         | 2 | 21  |    |    |    |    | 1  |   |    | 33    |
| Alfalfa           | 26        | 1 | 24  | 5  | 1  | 7  | 2  | 17 | 2 |    | 85    |
| Dry pasture       | 13        | 1 | 14  | 2  |    | 1  |    | 3  |   |    | 34    |
| Irrigated pasture | 9         | 1 | 8   |    |    |    | 1  | 1  |   |    | 20    |
| Ruderal/Developed | 4         |   | 1   |    |    |    |    |    |   |    | 5     |
| Vineyard          | 5         |   | 11  |    |    |    |    |    |   |    | 16    |
| Orchard           |           |   | 4   |    |    |    |    |    |   |    | 4     |
| Grassland         | 2         |   | 2   | 1  |    |    |    |    |   |    | 5     |
| Corn              | 10        | 1 | 5   |    |    |    |    |    |   |    | 16    |
| Field edge        | 7         |   | 4   | 3  |    |    |    |    | 1 |    | 15    |
| Tilled            | 8         |   | 11  | 2  |    |    |    | 4  |   |    | 25    |
| Solar field       | 24        |   | 10  |    |    | 1  |    |    |   |    | 35    |
| Idle/fallow       | 2         |   |     |    |    |    |    |    |   |    | 2     |
| Riparian/wetland  |           |   |     | 1  |    |    |    |    | 1 |    | 2     |
| Wheat             | 3         | 3 | 7   |    |    |    |    | 2  | 1 |    | 16    |
| Total             | 122       | 9 | 122 | 14 | 1  | 9  | 3  | 28 | 5 |    | 313   |

P = perching; S = soaring below 200 m; C = circling below 100 meters; F = Flying below 200 meters; CA = prey capture attempt; CS = prey capture successful; CU = prey capture unsuccessful; G = standing on the ground; K = kiting/hovering. \*Field or road edge was not a mapped habitat type, so these data are not included in the statistical analysis.



**Table 7. Red-tailed hawk behaviors by land cover type**

| Land Cover Type   | Behaviors |   |    |    |    |    |    |   |   |    | Total |
|-------------------|-----------|---|----|----|----|----|----|---|---|----|-------|
|                   | P         | S | C  | F  | CA | CS | CU | G | K | AF |       |
| Oats              | 12        |   | 2  |    |    |    |    |   |   |    | 14    |
| Alfalfa           | 71        | 1 | 11 | 1  | 1  |    | 2  |   |   |    | 87    |
| Dry pasture       | 45        |   | 8  | 2  |    |    |    | 1 |   |    | 56    |
| Irrigated pasture | 37        | 3 | 8  | 3  | 1  | 1  |    |   |   |    | 53    |
| Ruderal/Developed |           |   |    |    |    |    |    |   |   |    | 0     |
| Vineyard          | 32        | 1 | 14 | 1  |    |    |    |   |   |    | 48    |
| Orchard           | 34        |   | 4  |    |    |    |    |   |   |    | 38    |
| Grassland         | 9         |   | 5  |    | 1  |    |    |   |   |    | 15    |
| Corn              | 15        |   | 8  | 1  |    |    |    |   |   |    | 24    |
| Field edge        | 8         |   | 4  | 1  |    |    |    |   |   |    | 13    |
| Tilled            | 9         |   | 1  | 1  |    |    |    |   |   |    | 11    |
| Solar field       | 7         |   | 10 | 2  |    |    |    |   |   |    | 19    |
| Idle/Fallow       | 22        |   | 4  | 1  |    |    |    |   |   |    | 27    |
| Riparian/wetland  |           |   | 1  |    |    |    |    |   |   |    | 1     |
| Wheat             | 3         |   | 1  |    |    |    |    |   |   |    | 4     |
| Total             | 304       | 5 | 81 | 13 | 3  | 1  | 2  | 1 |   |    | 410   |

P = perching; S = soaring below 200 m; C = circling below 100 meters; F = Flying below 200 meters; CA = prey capture attempt; CS = prey capture successful; CU = prey capture unsuccessful; G = standing on the ground; K = kiting/hovering. \*Field or road edge was not a mapped habitat type, so these data are not included in the statistical analysis.

**Table 8. American kestrel behaviors by land cover type**

| Land Cover Type   | Behaviors |   |    |    |    |    |    |   |    |    | Total |
|-------------------|-----------|---|----|----|----|----|----|---|----|----|-------|
|                   | P         | S | C  | F  | CA | CS | CU | G | K  | AF |       |
| Oats              | 23        |   |    | 1  |    |    | 3  |   | 5  |    | 32    |
| Alfalfa           | 35        |   | 3  | 3  | 3  | 5  | 4  | 1 | 6  |    | 60    |
| Dry pasture       | 5         |   |    | 4  |    | 1  | 1  |   |    |    | 11    |
| Irrigated pasture | 11        |   | 1  | 1  |    | 1  |    |   |    | 1  | 15    |
| Ruderal/Developed |           |   |    |    |    |    |    |   |    |    | 0     |
| Vineyard          | 4         |   | 1  | 2  |    |    |    |   |    |    | 7     |
| Orchard           | 1         |   |    |    |    |    |    |   |    |    | 1     |
| Grassland         | 1         |   |    |    |    |    |    |   |    |    | 1     |
| Corn              | 17        |   |    | 4  |    | 1  | 2  |   |    | 1  | 25    |
| Field edge        | 9         |   | 2  | 5  |    |    |    |   |    |    | 16    |
| Tilled            | 18        |   | 1  |    |    | 1  |    |   |    |    | 20    |
| Solar field       | 17        |   | 2  | 4  | 4  | 1  | 1  |   |    |    | 29    |
| Idle/fallow       | 4         |   |    |    | 2  |    |    |   |    |    | 6     |
| Riparian/Wetland  |           |   |    |    |    |    |    |   |    |    | 0     |
| Wheat             |           |   |    |    |    | 2  |    |   | 3  |    | 5     |
| Total             | 145       |   | 10 | 24 | 9  | 12 | 11 | 1 | 14 | 2  | 228   |

P = perching; S = soaring below 200 m; C = circling below 100 meters; F = Flying below 200 meters; CA = prey capture attempt; CS = prey capture successful; CU = prey capture unsuccessful; G = standing on the ground; K = kiting/hovering, AF = aerial foraging. \*Field or road edge was not a mapped habitat type, so these data are not included in the statistical analysis.

To examine the extent of foraging within solar fields and to evaluate the foraging use of solar fields and other land cover types relative to their availability within the survey area, those behaviors that were considered foraging behaviors were isolated from the total occurrences and used in the statistical analysis. For Swainson’s hawk this included the following behaviors:

- Circling below 100 meters

- Kiting/Hovering
- Standing on ground
- Prey capture (attempt, successful, unsuccessful)

However, review of the data revealed an increase in Swainson's hawk perching occurrences compared with 2013, particularly at solar array fields (Plate 6). Although many of these were attributed to the proximity of the active nest at the Kammerer solar site, it also appeared that Swainson's hawk perching within the solar arrays had increased and may be attributed to using the structures as hunting perches within the array. The proportion of perching occurrences within in the solar array in 2021 (7.7 percent) increased nearly four times of that reported in 2013 (2.1 percent). As a result, although the analysis was initially conducted using the behaviors noted above, it was repeated using perching as a potential foraging behavior. Only those perching events within the solar arrays that were not attributed to the nesting activity at the Kammerer solar site were used.



Plate 6. Adult Swainson's hawk perched on solar panel at the McKenzie site. This use of the solar array suggests potential onsite foraging activity.

For the red-tailed hawk and American kestrel, perching was also included as a foraging behavior since these species commonly hunt from a perch. Note that with the exception of prey capture types and kiting/hovering, the remaining behaviors could be attributed to activities other than foraging. However, these are the primary foraging techniques of these species, and including them provides a reasonable estimation of foraging use for purposes of a comparative analysis.

### **Swainson's Hawk**

Table 9 shows the relationship between foraging occurrences and habitat/land use type acreages for Swainson's hawk. As expected, 33.3 percent of the foraging occurrences were in alfalfa.

Oats, dry pasture, and tilled fields account for an additional 34.5 percent. Although comprising only 3.7 percent of the land cover, 6.9 percent of the foraging occurrences were in solar fields. Table 10 shows the same relationship but includes additional perching occurrences within solar fields considered potential foraging occurrences, increasing the proportion of foraging occurrences in solar fields to 10.6 percent.

**Table 9. Swainson’s hawk foraging occurrences within each land cover type.**

| Land Cover Type   | Acres | Percent of Total | SWHA Foraging Observations | Percent of Total |
|-------------------|-------|------------------|----------------------------|------------------|
| Oats              | 844   | 15.3             | 22                         | 13.8             |
| Alfalfa           | 672   | 12.2             | 53                         | 33.3             |
| Dry Pasture       | 613   | 11.1             | 18                         | 11.3             |
| Irrigated Pasture | 585   | 10.6             | 10                         | 6.3              |
| Ruderal/Developed | 531   | 9.7              | 1                          | 0.6              |
| Vineyard          | 495   | 9.0              | 11                         | 6.9              |
| Orchard           | 393   | 7.1              | 4                          | 2.5              |
| Grassland         | 340   | 6.2              | 2                          | 1.3              |
| Corn              | 283   | 5.1              | 5                          | 3.1              |
| Tilled            | 235   | 4.3              | 15                         | 9.4              |
| Solar Array Field | 206   | 3.7              | 11                         | 6.9              |
| Idle/Fallow       | 159   | 2.9              | 0                          | 0                |
| Riparian/Wetland  | 77    | 1.4              | 1                          | 0.6              |
| Wheat             | 68    | 1.2              | 10                         | 6.3              |
| Total             | 5,501 | 100              | 163                        | 100              |

**Table 10. Swainson’s hawk foraging occurrences within each land cover type (including perching occurrences within solar array fields).**

| Land Cover Type   | Acres | Percent of Total | SWHA Foraging Observations | Percent of Total |
|-------------------|-------|------------------|----------------------------|------------------|
| Oats              | 844   | 15.3             | 22                         | 12.9             |
| Alfalfa           | 672   | 12.2             | 53                         | 31.2             |
| Dry Pasture       | 613   | 11.1             | 18                         | 10.6             |
| Irrigated Pasture | 585   | 10.6             | 10                         | 5.9              |
| Ruderal/Developed | 531   | 9.7              | 1                          | 0.6              |
| Vineyard          | 495   | 9.0              | 11                         | 6.5              |
| Orchard           | 393   | 7.1              | 4                          | 2.4              |
| Grassland         | 340   | 6.2              | 2                          | 1.2              |
| Corn              | 283   | 5.1              | 5                          | 2.9              |
| Tilled            | 235   | 4.3              | 15                         | 8.2              |
| Solar Array Field | 206   | 3.7              | 18                         | 10.6             |
| Idle/Fallow       | 159   | 2.9              | 0                          | 0                |
| Riparian/Wetland  | 77    | 1.4              | 1                          | 0.6              |
| Wheat             | 68    | 1.2              | 10                         | 5.9              |
| Total             | 5,501 | 100              | 170                        | 100              |

The first chi-square test determines whether or not foraging use was in proportion to the availability of the land cover types in the survey area. As expected, the pattern of use indicates a high degree of habitat selectivity and thus the null hypothesis was rejected ( $\chi^2_{13, d.f.} = 34.528$ ,  $P < 0.001$ ) (Table 11). In other words, Swainson’s hawks are selecting or avoiding specific crop or land cover types for foraging. Next, the contribution of the individual types was evaluated with regard to their significant contribution (positive or negative) to the chi-square

determination. Those with an observed use that exceeds the expected use, have a significant positive contribution (brown highlighting) and those with an expected use that exceeds the observed use have a significant negative contribution (blue highlighting) ( $\chi^2_{1.d.f.}=3.84$   $P<0.05$ ). In other words, Table 11 indicates that Swainson’s hawks appear to be using alfalfa, tilled, wheat, and solar array fields at a significantly greater frequency than would be expected relative to their availability in the survey area.

Table 12 shows the same relationship but includes the additional perching occurrences within solar fields considered potential foraging occurrences (Table 10), resulting in a similar outcome, but with a substantially greater positive contribution from solar array fields. In other words, Swainson’s hawks are not avoiding solar array fields within the agricultural landscape and appear to be using them at a greater frequency than would be expected given their availability.

Some caution is needed when interpreting these results. While the results indicate that land cover types overall are not used in proportion to their availability and that certain types have a significant contribution to this result, it does not necessarily indicate that those that do not have a significant contribution or that have a significant negative association lack value. For example, dry pasture accounted for the third highest number of Swainson’s hawk foraging occurrences, but because dry pasture was relatively common within the survey area, the expected use was similar to the observed use. So, while it does not appear to have been selected over other land cover types or used in proportion to its availability, 10.6 percent of all documented Swainson’s hawk foraging occurred in dry pastures, and therefore this type, regardless of its availability or use, clearly has foraging value to this species.

**Table 11. Chi-square values for Swainson’s hawk.**

| Land Cover Type   | Available Land Cover (%) | Observed Use of Land Cover (Frequency) | Expected Use of Land Cover (Frequency) | Chi-square Contribution |
|-------------------|--------------------------|----------------------------------------|----------------------------------------|-------------------------|
| Oats              | 15.3                     | 22                                     | 24.94                                  | 0.35                    |
| Alfalfa           | 12.2                     | 53                                     | 19.89                                  | 55.12                   |
| Dry Pasture       | 11.1                     | 18                                     | 18.09                                  | 0.00                    |
| Irrigated Pasture | 10.6                     | 10                                     | 17.28                                  | 3.07                    |
| Ruderal/Developed | 9.7                      | 1                                      | 15.81                                  | 13.87                   |
| Vineyard          | 9.0                      | 11                                     | 14.67                                  | 0.92                    |
| Orchard           | 7.1                      | 4                                      | 11.57                                  | 4.95                    |
| Grassland         | 6.2                      | 2                                      | 10.11                                  | 6.51                    |
| Corn              | 5.1                      | 5                                      | 8.31                                   | 1.32                    |
| Tilled            | 4.3                      | 15                                     | 7.01                                   | 9.11                    |
| Solar Array Field | 3.7                      | 11                                     | 6.03                                   | 4.10                    |
| Idle/Fallow       | 2.9                      | 0                                      | 4.72                                   | 4.72                    |
| Riparian/Wetland  | 1.4                      | 1                                      | 2.28                                   | 0.72                    |
| Wheat             | 1.2                      | 10                                     | 1.96                                   | 32.98                   |
| Total             | 100                      | 163                                    | 163                                    | 137.74*                 |

\*137.74 represents the sample statistic in the chi-square analysis. To be considered significant, this value must exceed the Critical Value ( $\chi^2_{13.d.f.}=34.528$   $P<0.001$ ), indicating that the observed frequencies are significantly different from the expected frequencies. The brown-highlighted rows indicate the land cover types that have a significant positive contribution and the blue-highlighted rows indicate a significant negative contribution ( $\chi^2_{1.d.f.}=3.84$   $P<0.05$ ).



**Table 12. Chi-square values for Swainson’s hawk (including perching in solar arrays).**

| Land Cover Type   | Available Land Cover (%) | Observed Use of Land Cover (Frequency) | Expected Use of Land Cover (Frequency) | Chi-square Contribution |
|-------------------|--------------------------|----------------------------------------|----------------------------------------|-------------------------|
| Oats              | 15.3                     | 22                                     | 26.01                                  | 0.62                    |
| Alfalfa           | 12.2                     | 53                                     | 20.74                                  | 50.18                   |
| Dry Pasture       | 11.1                     | 18                                     | 18.87                                  | 0.04                    |
| Irrigated Pasture | 10.6                     | 10                                     | 18.02                                  | 3.57                    |
| Ruderal/Developed | 9.7                      | 1                                      | 16.49                                  | 14.55                   |
| Vineyard          | 9.0                      | 11                                     | 15.30                                  | 1.21                    |
| Orchard           | 7.1                      | 4                                      | 12.07                                  | 5.40                    |
| Grassland         | 6.2                      | 2                                      | 10.54                                  | 6.92                    |
| Corn              | 5.1                      | 5                                      | 8.67                                   | 1.55                    |
| Tilled            | 4.3                      | 15                                     | 7.31                                   | 8.09                    |
| Solar Array Field | 3.7                      | 18                                     | 6.29                                   | 21.80                   |
| Idle/Fallow       | 2.9                      | 0                                      | 4.93                                   | 4.93                    |
| Riparian/Wetland  | 1.4                      | 1                                      | 2.38                                   | 0.80                    |
| Wheat             | 1.2                      | 10                                     | 2.04                                   | 31.06                   |
| Total             | 100                      | 170                                    | 170                                    | 150.72*                 |

\*150.72 represents the sample statistic in the chi-square analysis, which exceeds the Critical Value ( $\chi^2_{13,d.f.} = 34.528$  P<0.001), indicating that the observed frequencies are significantly different from the expected frequencies. The brown-highlighted rows indicate the land cover types that have a significant positive contribution and the blue-highlighted rows indicate a significant negative contribution ( $\chi^2_{1,d.f.} = 3.84$  P<0.05).

### Red-tailed Hawk

Table 13 shows the relationship between foraging occurrences and land use type acreages for red-tailed hawk. Three types comprised nearly 50 percent of the foraging occurrences, alfalfa, irrigated pasture, and dry pasture. Red-tailed hawk was also found more frequently in vineyards and orchards, which together comprised 22 percent of the total foraging occurrences. Most of these were perching individuals and were thus considered potential foraging occurrences, although it is likely that many were roosting rather than foraging. Solar fields accounted for 4.5 percent of the red-tailed hawk occurrences and just 3.7 percent of the total land cover.

**Table 13. Red-tailed hawk foraging occurrences within each land cover type.**

| Land Cover Type   | Acres | Percent of Total | RTHA Foraging Observations | Percent of Total |
|-------------------|-------|------------------|----------------------------|------------------|
| Oats              | 844   | 15.3             | 14                         | 3.7              |
| Alfalfa           | 672   | 12.2             | 85                         | 22.4             |
| Dry Pasture       | 613   | 11.1             | 54                         | 14.2             |
| Irrigated Pasture | 585   | 10.6             | 47                         | 12.4             |
| Ruderal/Developed | 531   | 9.7              | 0                          | 0                |
| Vineyard          | 495   | 9.0              | 46                         | 12.1             |
| Orchard           | 393   | 7.1              | 38                         | 10.0             |
| Grassland         | 340   | 6.2              | 15                         | 3.9              |
| Corn              | 283   | 5.1              | 23                         | 6.1              |
| Tilled            | 235   | 4.3              | 10                         | 2.6              |
| Solar Array Field | 206   | 3.7              | 17                         | 4.5              |
| Idle/Fallow       | 159   | 2.9              | 26                         | 6.8              |
| Riparian/Wetland  | 77    | 1.4              | 1                          | 0.3              |
| Wheat             | 68    | 1.2              | 4                          | 1.1              |
| Total             | 5,501 | 100              | 380                        | 100              |

As expected, the pattern of use for red-tailed hawk also indicates a high degree of habitat selectivity and thus the null hypothesis was rejected ( $\chi^2_{13,d.f.} = 34.528$   $P < 0.001$ ) (Table 14). The contribution of the individual types indicated that alfalfa, idle/fallow fields, and to a marginal extent vineyards and orchards, were used significantly more than their relative availability and oats and ruderal/developed, were used significantly less than their relative availability ( $\chi^2_{1,d.f.} = 3.84$   $P < 0.05$ ). Although not contributing significantly to the sample statistic, the results also indicate that solar fields were not avoided by foraging red-tailed hawks. Instead, they accounted for 4.5 percent of all red-tailed hawk foraging occurrences with observed use higher than expected use.

As noted above, lack of a significant contribution or a significant negative contribution does not necessarily indicate lack of value. For example, dry and irrigated pastures accounted for 14.2 and 12.4 percent of foraging occurrences, respectively (Table 13). But because these types occurred more frequently in the survey area, even though observed use exceeded expected use, neither had a significant positive contribution. However, the proportion of occurrences clearly suggests the importance of these land cover types to foraging red-tailed hawks.

**Table 14. Chi-square values for red-tailed hawk.**

| Land Cover Type   | Available Land Cover (%) | Observed Use of Land Cover (Frequency) | Expected Use of Land Cover (Frequency) | Chi-square Contribution |
|-------------------|--------------------------|----------------------------------------|----------------------------------------|-------------------------|
| Oats              | 15.3                     | 14                                     | 58.14                                  | 33.51                   |
| Alfalfa           | 12.2                     | 85                                     | 46.36                                  | 32.21                   |
| Dry Pasture       | 11.1                     | 54                                     | 42.18                                  | 3.31                    |
| Irrigated Pasture | 10.6                     | 47                                     | 40.28                                  | 1.12                    |
| Ruderal/Developed | 9.7                      | 0                                      | 36.86                                  | 36.86                   |
| Vineyard          | 9.0                      | 46                                     | 34.20                                  | 4.07                    |
| Orchard           | 7.1                      | 38                                     | 26.98                                  | 4.50                    |
| Grassland         | 6.2                      | 15                                     | 23.56                                  | 3.11                    |
| Corn              | 5.1                      | 23                                     | 19.38                                  | 0.68                    |
| Tilled            | 4.3                      | 10                                     | 16.34                                  | 2.46                    |
| Solar Array Field | 3.7                      | 17                                     | 14.06                                  | 0.61                    |
| Idle/Fallow       | 2.9                      | 26                                     | 11.02                                  | 20.36                   |
| Riparian/Wetland  | 1.4                      | 1                                      | 5.32                                   | 3.51                    |
| Wheat             | 1.2                      | 4                                      | 4.56                                   | 0.07                    |
| Total             | 100                      | 380                                    | 380                                    | 146.38*                 |

\*146.38 represents the sample statistic in the chi-square analysis. To be considered significant, this value must exceed the Critical Value ( $\chi^2_{13,d.f.} = 34.528$   $P < 0.001$ ), indicating that the observed frequencies are significantly different from the expected frequencies. The brown-highlighted rows indicate the land cover types that have a significant positive contribution and the blue-highlighted rows indicate a significant negative contribution ( $\chi^2_{1,d.f.} = 3.84$   $P < 0.05$ ).

### American Kestrel

Table 15 shows the relationship between foraging occurrences and habitat/land use type acreages for American kestrel. Three types made up 58.6 percent of the foraging occurrences, alfalfa, oats, and solar array fields. Thirteen percent of all foraging occurrences were in solar fields.

**Table 15. American kestrel foraging occurrences within each land cover type.**

| Land Cover Type   | Acres | Percent of Total | AMKE Foraging Observations | Percent of Total |
|-------------------|-------|------------------|----------------------------|------------------|
| Oats              | 844   | 15.3             | 31                         | 16.1             |
| Alfalfa           | 672   | 12.2             | 57                         | 29.5             |
| Dry Pasture       | 613   | 11.1             | 7                          | 3.6              |
| Irrigated Pasture | 585   | 10.6             | 14                         | 7.3              |
| Ruderal/Developed | 531   | 9.7              | 0                          | 0                |
| Vineyard          | 495   | 9.0              | 5                          | 2.6              |
| Orchard           | 393   | 7.1              | 1                          | 0.5              |
| Grassland         | 340   | 6.2              | 1                          | 0.5              |
| Corn              | 283   | 5.1              | 21                         | 10.9             |
| Tilled            | 235   | 4.3              | 20                         | 10.4             |
| Solar Array Field | 206   | 3.7              | 25                         | 13.0             |
| Idle/Fallow       | 159   | 2.9              | 6                          | 3.1              |
| Riparian/Wetland  | 77    | 1.4              | 0                          | 0                |
| Wheat             | 68    | 1.2              | 5                          | 2.6              |
| Total             | 5,501 | 100              | 193                        | 100              |

The pattern of use for American kestrel also indicates a high degree of habitat selectivity and thus the null hypothesis was rejected ( $\chi^2_{13,d.f.} = 34.528$   $P < 0.001$ ) (Table 16). The contribution of the individual types indicate that alfalfa, solar fields, tilled, and corn fields were used significantly more than their relative availability, and dry pasture, ruderal/developed, vineyard, orchard, and grassland were used significantly less than their relative availability ( $\chi^2_{1,d.f.} = 3.84$   $P < 0.05$ ).

Foraging use of solar fields by American kestrels was particularly high due mainly to the high proportion of perching occurrences (63.6 percent) (Table 8). The solar panels and the perimeter fence provided excellent perching habitat for kestrels (Plate 7).

**Table 16. Chi-square values for American kestrel.**

| Land Cover Type   | Available Land Cover (%) | Observed Use of Land Cover (Frequency) | Expected Use of Land Cover (Frequency) | Chi-square Contribution |
|-------------------|--------------------------|----------------------------------------|----------------------------------------|-------------------------|
| Oats              | 15.3                     | 31                                     | 29.53                                  | 0.07                    |
| Alfalfa           | 12.2                     | 57                                     | 23.55                                  | 47.51                   |
| Dry Pasture       | 11.1                     | 7                                      | 21.42                                  | 9.71                    |
| Irrigated Pasture | 10.6                     | 14                                     | 20.46                                  | 2.04                    |
| Ruderal/Developed | 9.7                      | 0                                      | 18.72                                  | 18.72                   |
| Vineyard          | 9.0                      | 5                                      | 17.37                                  | 8.81                    |
| Orchard           | 7.1                      | 1                                      | 13.70                                  | 11.77                   |
| Grassland         | 6.2                      | 1                                      | 11.97                                  | 10.05                   |
| Corn              | 5.1                      | 21                                     | 9.84                                   | 12.66                   |
| Tilled            | 4.3                      | 20                                     | 8.30                                   | 11.70                   |
| Solar Array Field | 3.7                      | 25                                     | 7.14                                   | 44.68                   |
| Idle/Fallow       | 2.9                      | 6                                      | 5.60                                   | 0.03                    |
| Riparian/Wetland  | 1.4                      | 0                                      | 2.70                                   | 2.70                    |
| Wheat             | 1.2                      | 5                                      | 2.32                                   | 3.09                    |
| Total             | 100                      | 193                                    | 193                                    | 183.54                  |

\*183.54 represents the sample statistic in the chi-square analysis. To be considered significant, this value must exceed the Critical Value ( $\chi^2_{13,d.f.} = 34.528$   $P < 0.001$ ), indicating that the observed frequencies are significantly different from the expected frequencies. Brown-highlight indicates a significant contribution and blue indicates negative contribution ( $\chi^2_{1,d.f.} = 3.84$   $P < 0.05$ ).



Plate 7. American kestrel perch-hunting on a solar panel at the Kammerer Site.

## All Raptors

Table 17 shows the relationship between foraging occurrences and land cover type acreages for all raptors combined. Not unexpectedly, the largest proportion of foraging occurrences for all raptors combined occurred in alfalfa fields (26.2 percent), although this land cover type made up just 12.2 percent of the survey area. Dry pasture, irrigated pasture, and oats were also relatively frequently used and combined for a total of 29.3 percent of the occurrences, although they made up 37 percent of the survey area. Solar array fields, 3.7 percent of the survey area, contributed 7.2 percent of the foraging occurrences for all raptors combined.

The overall pattern of use for all raptor species combined also indicates a high degree of habitat selectivity and thus the null hypothesis was rejected ( $\chi^2_{13, d.f.} = 34.528$   $P < 0.001$ ) (Table 18). The contribution of the individual types indicates that alfalfa, solar fields, idle/fallow, and tilled fields were used significantly more than their relative availability, and ruderal/developed, grassland, and oats were used significantly less than their relative availability ( $\chi^2_{1, d.f.} = 3.84$   $P < 0.05$ ). With the same cautionary notes expressed above relating to existing knowledge of observed habitat value and the availability/frequency formulation used here, it is clear that raptors are not avoiding solar array fields and at least to some extent appear to be selecting them.



**Table 17. All raptor foraging occurrences within each land cover type.**

| Land Cover Type   | Acres | Percent of Total | All Raptor Foraging Observations | Percent of Total |
|-------------------|-------|------------------|----------------------------------|------------------|
| Oats              | 844   | 15.3             | 71                               | 9.1              |
| Alfalfa           | 672   | 12.2             | 205                              | 26.2             |
| Dry Pasture       | 613   | 11.1             | 83                               | 10.6             |
| Irrigated Pasture | 585   | 10.6             | 75                               | 9.6              |
| Ruderal/Developed | 531   | 9.7              | 1                                | 0.1              |
| Vineyard          | 495   | 9.0              | 67                               | 8.6              |
| Orchard           | 393   | 7.1              | 43                               | 5.5              |
| Grassland         | 340   | 6.2              | 19                               | 2.4              |
| Corn              | 283   | 5.1              | 51                               | 6.5              |
| Tilled            | 235   | 4.3              | 46                               | 5.9              |
| Solar Array Field | 206   | 3.7              | 56                               | 7.2              |
| Idle/Fallow       | 159   | 2.9              | 39                               | 5.0              |
| Riparian/Wetland  | 77    | 1.4              | 6                                | 0.8              |
| Wheat             | 68    | 1.2              | 19                               | 2.4              |
| Total             | 5,501 | 100              | 781                              | 100              |

**Table 18. Chi-square values for all raptors.**

| Land Cover Type   | Available Land Cover (%) | Observed Use of Land Cover (Frequency) | Expected Use of Land Cover (Frequency) | Chi-square Contribution |
|-------------------|--------------------------|----------------------------------------|----------------------------------------|-------------------------|
| Oats              | 15.3                     | 71                                     | 119.49                                 | 19.68                   |
| Alfalfa           | 12.2                     | 205                                    | 95.28                                  | 126.35                  |
| Dry Pasture       | 11.1                     | 83                                     | 86.69                                  | 0.16                    |
| Irrigated Pasture | 10.6                     | 75                                     | 82.79                                  | 0.73                    |
| Ruderal/Developed | 9.7                      | 1                                      | 75.76                                  | 73.77                   |
| Vineyard          | 9.0                      | 67                                     | 70.29                                  | 0.15                    |
| Orchard           | 7.1                      | 43                                     | 55.45                                  | 2.80                    |
| Grassland         | 6.2                      | 19                                     | 48.42                                  | 17.88                   |
| Corn              | 5.1                      | 51                                     | 39.83                                  | 3.13                    |
| Tilled            | 4.3                      | 46                                     | 33.58                                  | 4.59                    |
| Solar Array Field | 3.7                      | 56                                     | 28.90                                  | 25.41                   |
| Idle/Fallow       | 2.9                      | 39                                     | 22.65                                  | 11.80                   |
| Riparian/Wetland  | 1.4                      | 6                                      | 10.93                                  | 2.22                    |
| Wheat             | 1.2                      | 19                                     | 9.37                                   | 9.90                    |
| Total             | 100                      | 781                                    | 781                                    | 298.57                  |

\*298.57 represents the sample statistic in the chi-square analysis. To be considered significant, this value must exceed the Critical Value ( $\chi^2_{13, d.f.} = 34.528$   $P < 0.001$ ), indicating that the observed frequencies are significantly different from the expected frequencies. The brown-highlighted rows indicate the land cover types that have a significant positive contribution and the blue-highlighted rows indicate a significant negative contribution ( $\chi^2_{1, d.f.} = 3.84$   $P < 0.05$ ).

## Stationary Observation Points

A total of 160 raptor occurrences were reported within the solar array fields during the stationary observation point surveys (Table 19). Of these, 126 (78.8 percent) were considered foraging occurrences. Consistent with the driving transect survey results, American kestrel (38.8 percent) and Swainson’s hawk (36.9 percent) were the most commonly observed raptors. Nearly 60 percent of the Swainson’s hawk occurrences were considered foraging occurrences. Some of the perching occurrences may also have been associated with foraging behavior, but were excluded for consistency with the 2013 data.

Although fewer Swainson’s hawks were observed in 2021 (59) than in 2013 (108), the proportion of foraging occurrences (59.3 percent in 2021 and 63.9 percent in 2013) was similar. Results were also consistent for all other species between 2013 and 2021.

Table 20 shows the different behaviors of each species within the solar fields. Similar to the road transect results, the most common behaviors were circling below 100 meters and perching, comprising 78.6 percent of foraging occurrences. Nearly 17 percent of the foraging occurrences were prey captures or prey capture attempts.

**Table 19. Total number of occurrences and the proportion of foraging occurrences in solar fields for all species observed.**

| Species             | Total occurrences | Foraging occurrences | Percent Foraging occurrences |
|---------------------|-------------------|----------------------|------------------------------|
| Swainson’s hawk     | 59                | 35                   | 59.3                         |
| Red-tailed hawk     | 27                | 26                   | 96.3                         |
| American kestrel    | 62                | 55                   | 88.7                         |
| Red-shouldered hawk | 2                 | 1                    | 50.0                         |
| Cooper’s hawk       | 8                 | 7                    | 87.5                         |
| Northern harrier    | 1                 | 1                    | 100                          |
| Peregrine falcon    | 1                 | 1                    | 100                          |
| Total               | 160               | 126                  | 78.8                         |

**Table 20. Behaviors in solar fields (all species). Foraging behaviors are highlighted.**

|              | Behaviors |   |    |   |    |   |    |    |    |
|--------------|-----------|---|----|---|----|---|----|----|----|
|              | P         | S | C  | K | F  | G | CA | CS | CU |
| SWHA         | 14        | 2 | 32 | 1 | 8  |   | 1  | 1  |    |
| RTHA         | 3         | 1 | 21 |   |    | 1 | 1  |    |    |
| AMKE         | 31        |   | 5  | 2 | 8  |   | 9  | 5  | 2  |
| RSHA         |           |   | 1  |   | 1  |   |    |    |    |
| COHA         | 2         |   | 3  |   | 1  |   | 2  |    |    |
| NOHA         |           |   |    |   | 1  |   |    |    |    |
| PEFA         |           |   | 1  |   |    |   |    |    |    |
| <b>Total</b> | 50        | 3 | 63 | 3 | 19 | 1 | 13 | 6  | 2  |

P = perching; S = soaring below 200 m; C = circling below 100 meters; F = Flying below 200 meters; CA = prey capture attempt; CS = prey capture successful; CU = prey capture unsuccessful; G = standing on the ground; K = kiting/hovering. SWHA = Swainson’s hawk; RTHA = red-tailed hawk; AMKE = American kestrel; RSHA = red-shouldered hawk; COHA = Cooper’s hawk; NOHA = northern harrier; PEFA = peregrine falcon.

## Summary and Conclusions

The results of this study indicate ongoing raptor use of moderately-sized solar array fields following conversion from cultivated uses. Results of the strip transect road survey indicate raptor use in general, and specifically Swainson's hawk and American kestrel use of solar array fields exceeds expected use based on their availability within the agricultural landscape. This suggests that solar array fields are not avoided by these species and may be selected at a greater frequency than many cultivated land cover types. The stationary observation point surveys confirm use within solar array fields, including foraging or potential foraging use by all species observed.

### Comparison with 2013 Results

Data from 2021 are consistent with the 2013 results. Although there were some differences in the use of specific cultivated land cover types for some species, similar use patterns were found, particularly the overall use of solar array fields.

The total number and the relative proportion of Swainson's hawks in 2021 (30.4 percent) was less than in 2013 (38.5 percent), while the numbers of other species, including red-tailed hawk, American kestrel, and red-shouldered hawk, increased in 2021 (Table 21). This may have been due in part to the expansion of the strip transect road survey route, which increased the proportion of grasslands, and to the conversion to orchards along the route, which decreased the proportion of irrigated pasture (Table 22). The extent of orchard expansion throughout the region has resulted in declines of available habitat for Swainson's hawk (Estep 2020).

The proportion of Swainson's hawk foraging observations in solar array fields was greater in 2013 (12.8 percent) than in 2021 (6.9 percent). However, the observed use of solar array fields by Swainson's hawk has changed since 2013, with a greater proportion of perching occurrences in 2021. Perching was not included as a potential foraging behavior in 2013, but 2021 observations suggest that perching within the solar array may have become a more common technique for foraging within the array. Thus, the data were recalculated by including several perching occurrences considered to be foraging behaviors, resulting in the proportion of foraging observations approaching 11 percent and greater consistency with 2013 results. However, either result (including and not including the additional perching occurrences) resulted in an observed use of solar array fields by Swainson's hawks that exceeded expected use. In other words, in either case, Swainson's hawks appear to be using solar array fields at a significantly greater frequency than would be expected relative to their availability.

### Conclusions

The following conclusions are the same as were made in the 2013 study (Estep 2013).

**1. Swainson's hawks use and forage within managed solar array fields.** The results of the driving transect surveys and the stationary observation point surveys indicate foraging use of the solar array fields by Swainson's hawks and other raptors. While it is difficult to observe the precise locations of prey capture attempts in solar array fields due to their height, the rows of

solar trackers may not preclude foraging in the open grasslands between them. However, foraging hawks may also be focused primarily on the wider spaces between the sub-areas within the projects and around the perimeter of the projects. Of key importance is the management of a grassland substrate to promote rodent populations and maintaining this substrate at a height that promotes visibility and access to prey. Unlike most crop types, this condition is available in solar fields throughout the spring and summer breeding season, and thus provides a consistent and available source of prey. Many crop types, while important in the overall agricultural matrix, may be available for a relatively short period of time during the breeding season due to the planting, growth, and harvesting regime.

**2. Swainson's hawk foraging use of solar array fields exceeds what would be expected based on their availability.** This suggests that not only were the solar array fields being used by foraging Swainson's hawks, but that they were being selectively used at greater frequency than some of the other land cover types in the survey area. The data indicates a similar conclusion for American kestrel, and although not selected at a greater frequency, data on red-tailed hawk use of solar array fields indicate they were not avoided.

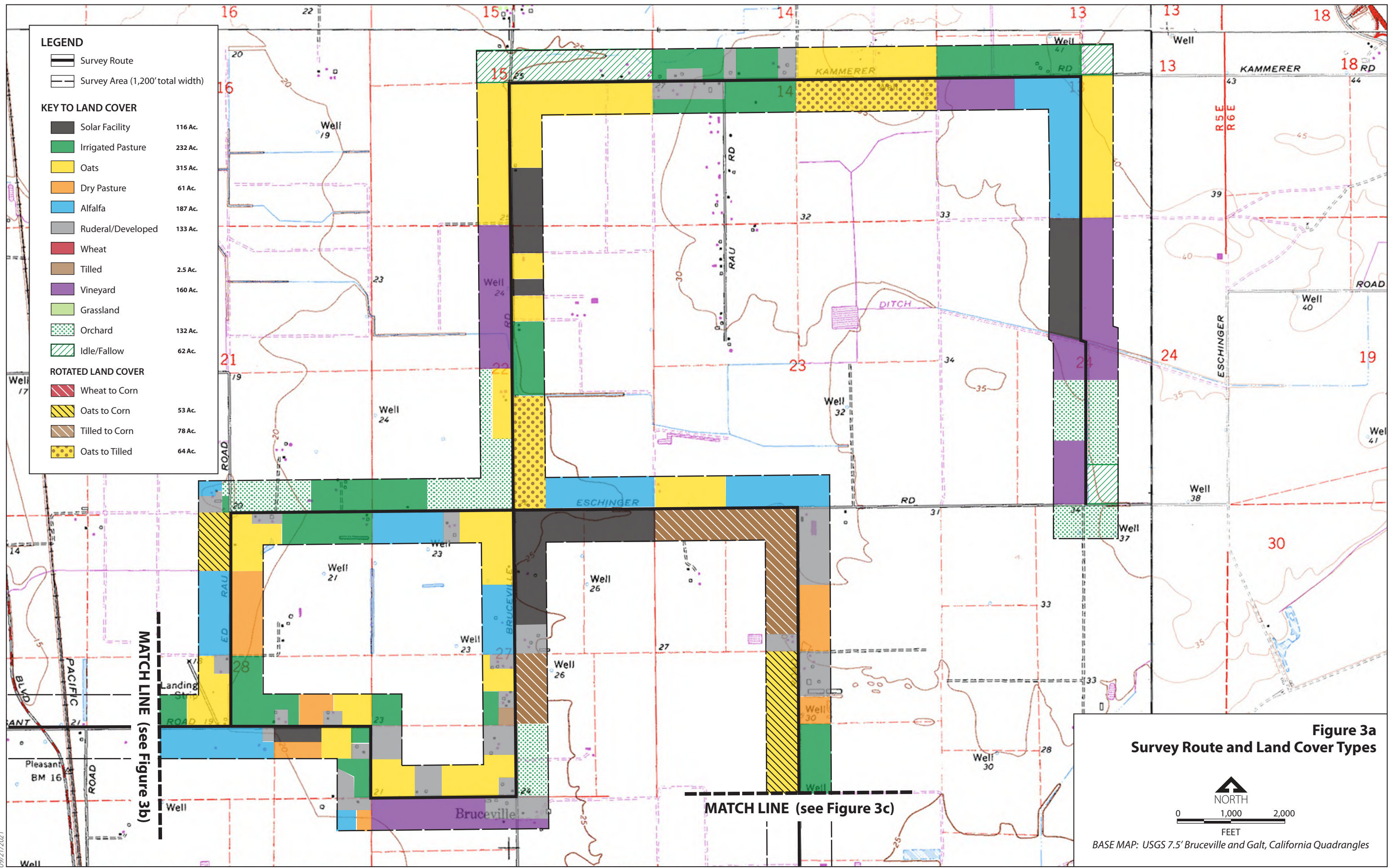
**3. Within the diverse agricultural landscape of the study area, the presence of the managed solar array fields (i.e., managed grassland substrate) did not appear to negatively affect the Swainson's hawk and other raptors.** The solar array fields were used for foraging similarly to other moderate to high value agricultural cover types and their presence did not appear to affect the overall use of the landscape by Swainson's hawks or other raptors. As one element of an otherwise diverse agricultural matrix, the solar array fields provided a consistent and an apparently reasonably accessible source of prey, particularly for Swainson's hawks and American kestrels. However, this outcome should be viewed with some caution in that while this study indicated a positive relationship, only a small percent of the survey area was solar array field. But these results suggest that solar array fields designed and managed similarly as those included within this study and integrated into a diverse agricultural landscape may not negatively affect Swainson's hawk and other raptors.



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**LEGEND**

- Survey Route
- Survey Area (1,200' total width)

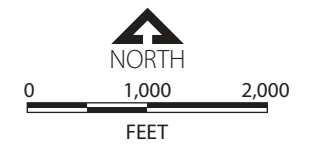
**KEY TO LAND COVER**

|                   |         |
|-------------------|---------|
| Solar Facility    | 116 Ac. |
| Irrigated Pasture | 232 Ac. |
| Oats              | 315 Ac. |
| Dry Pasture       | 61 Ac.  |
| Alfalfa           | 187 Ac. |
| Ruderal/Developed | 133 Ac. |
| Wheat             |         |
| Tilled            | 2.5 Ac. |
| Vineyard          | 160 Ac. |
| Grassland         |         |
| Orchard           | 132 Ac. |
| Idle/Fallow       | 62 Ac.  |

**ROTATED LAND COVER**

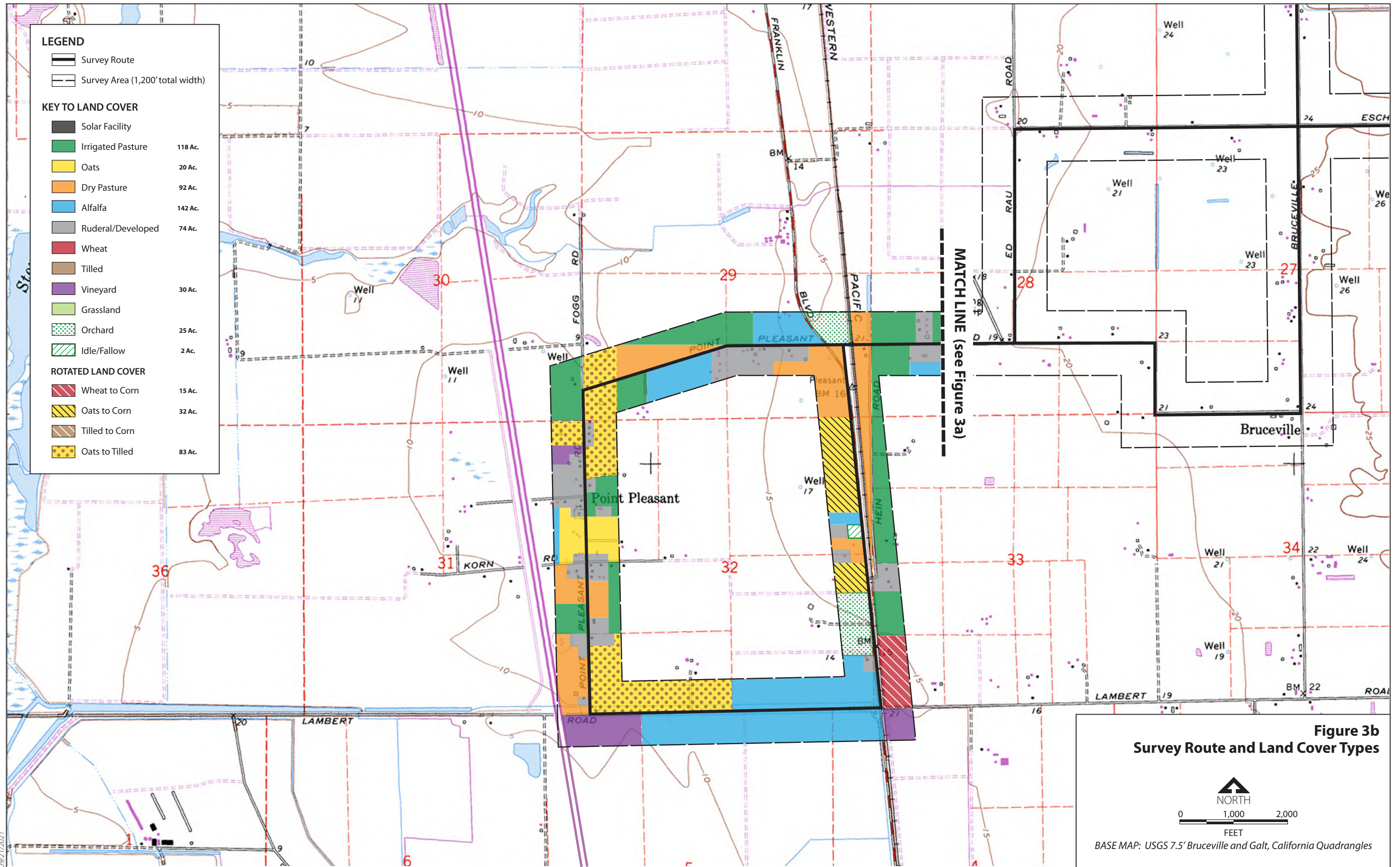
|                |        |
|----------------|--------|
| Wheat to Corn  |        |
| Oats to Corn   | 53 Ac. |
| Tilled to Corn | 78 Ac. |
| Oats to Tilled | 64 Ac. |

**Figure 3a**  
**Survey Route and Land Cover Types**

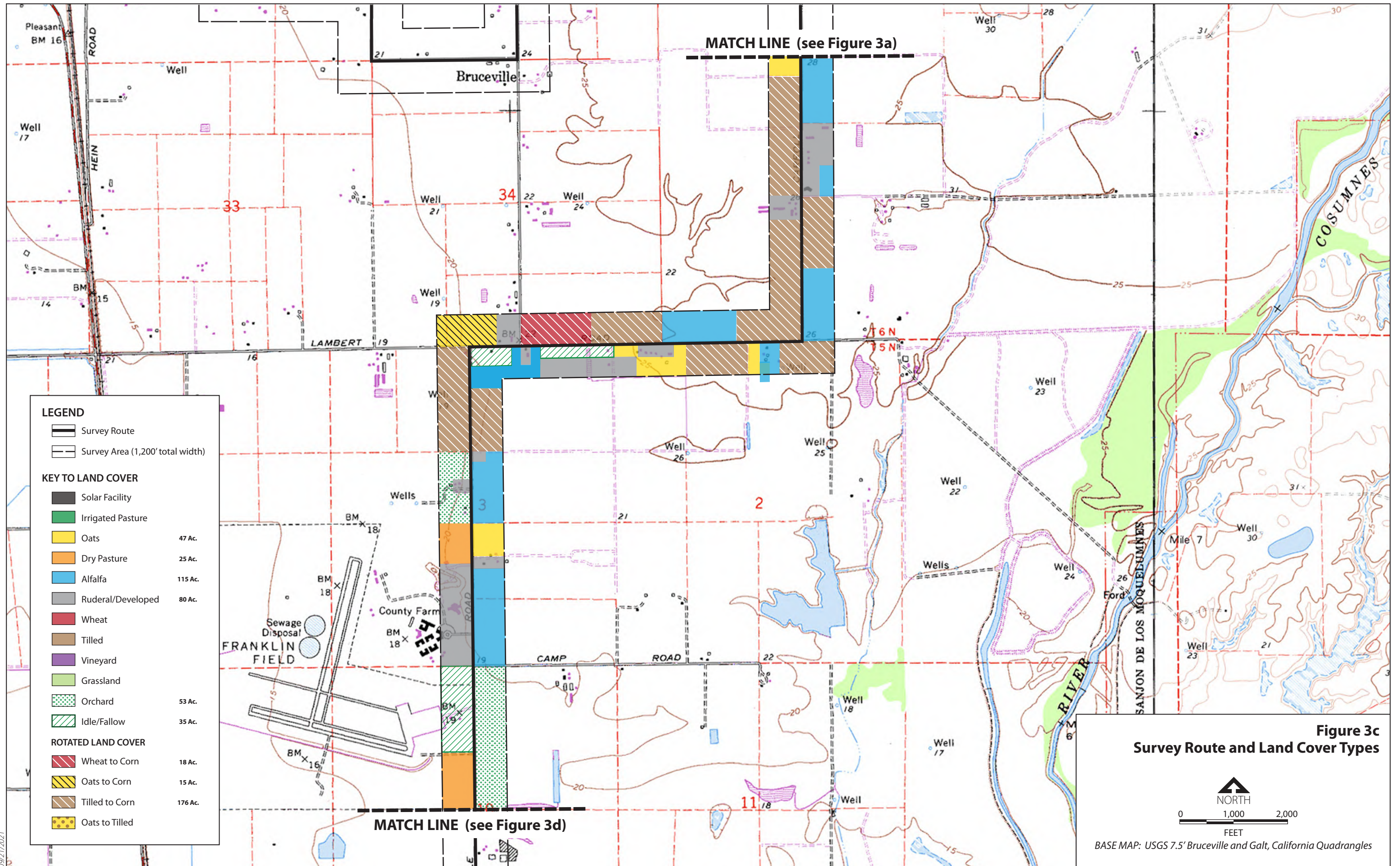


BASE MAP: USGS 7.5' Bruceville and Galt, California Quadrangles

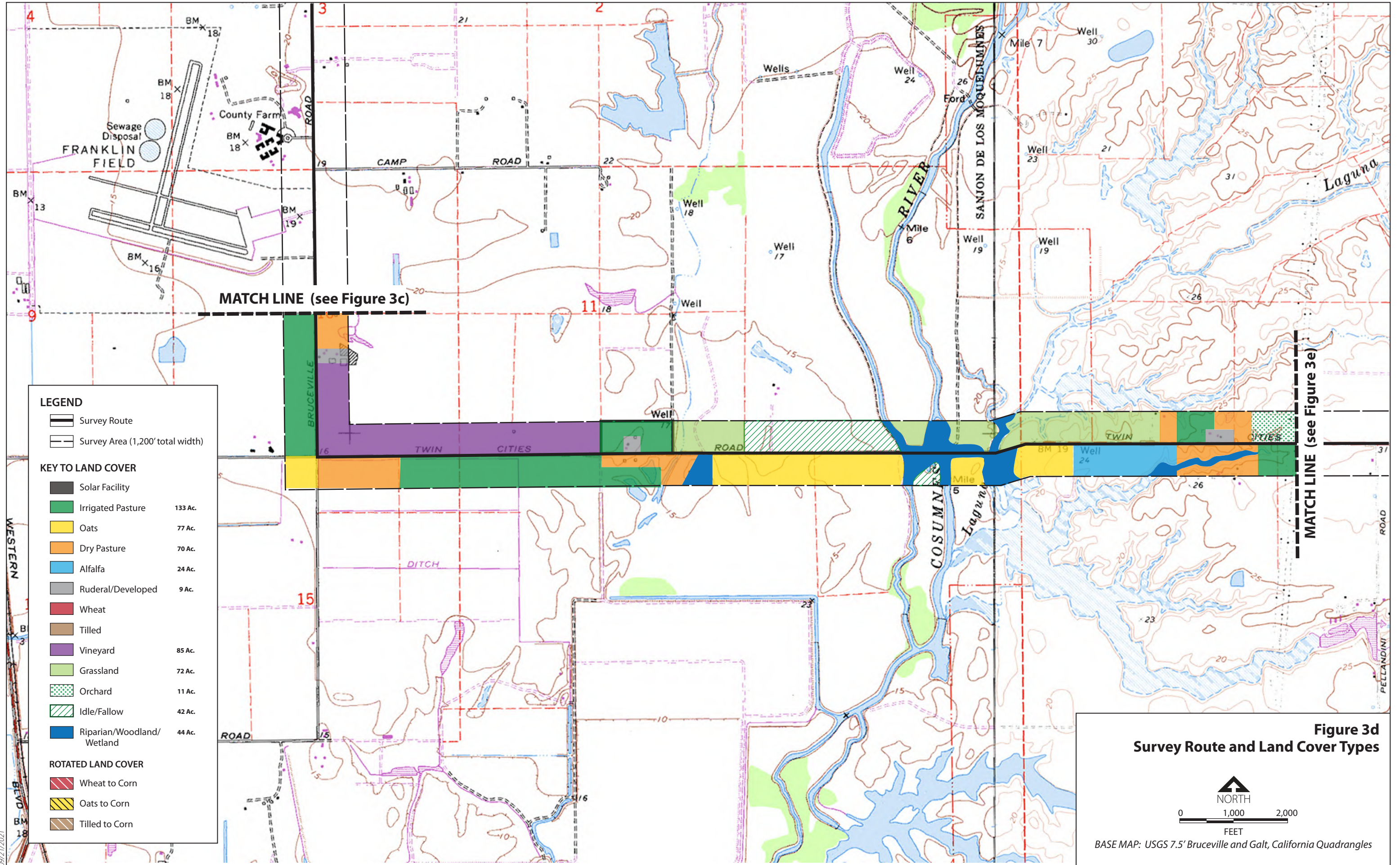




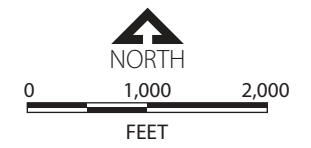








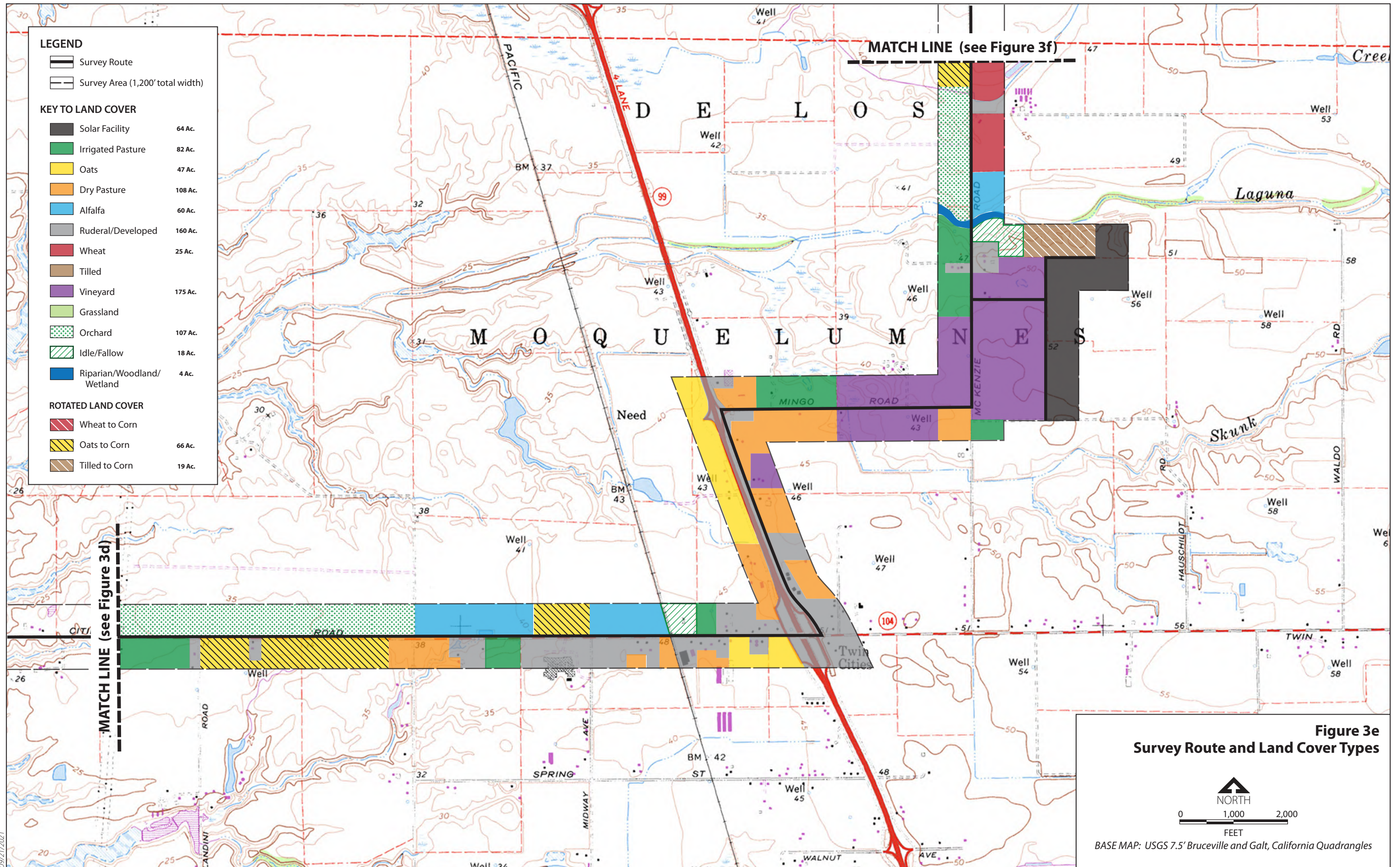
**Figure 3d**  
**Survey Route and Land Cover Types**



BASE MAP: USGS 7.5' Bruceville and Galt, California Quadrangles

09/21/2021





**LEGEND**

- Survey Route
- Survey Area (1,200' total width)

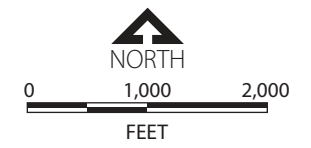
**KEY TO LAND COVER**

- Solar Facility 64 Ac.
- Irrigated Pasture 82 Ac.
- Oats 47 Ac.
- Dry Pasture 108 Ac.
- Alfalfa 60 Ac.
- Ruderal/Developed 160 Ac.
- Wheat 25 Ac.
- Tilled
- Vineyard 175 Ac.
- Grassland
- Orchard 107 Ac.
- Idle/Fallow 18 Ac.
- Riparian/Woodland/Wetland 4 Ac.

**ROTATED LAND COVER**

- Wheat to Corn
- Oats to Corn 66 Ac.
- Tilled to Corn 19 Ac.

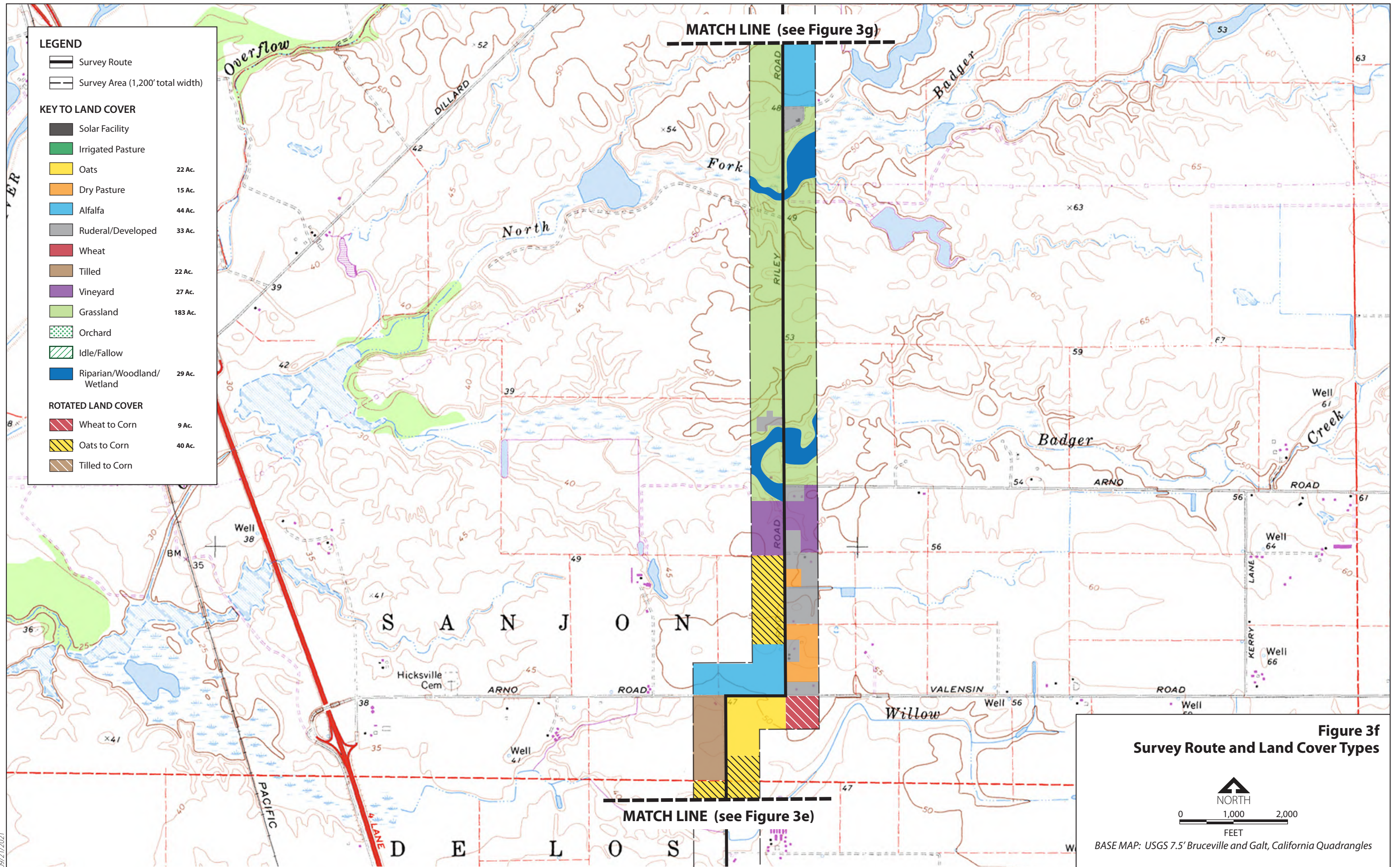
**Figure 3e**  
**Survey Route and Land Cover Types**



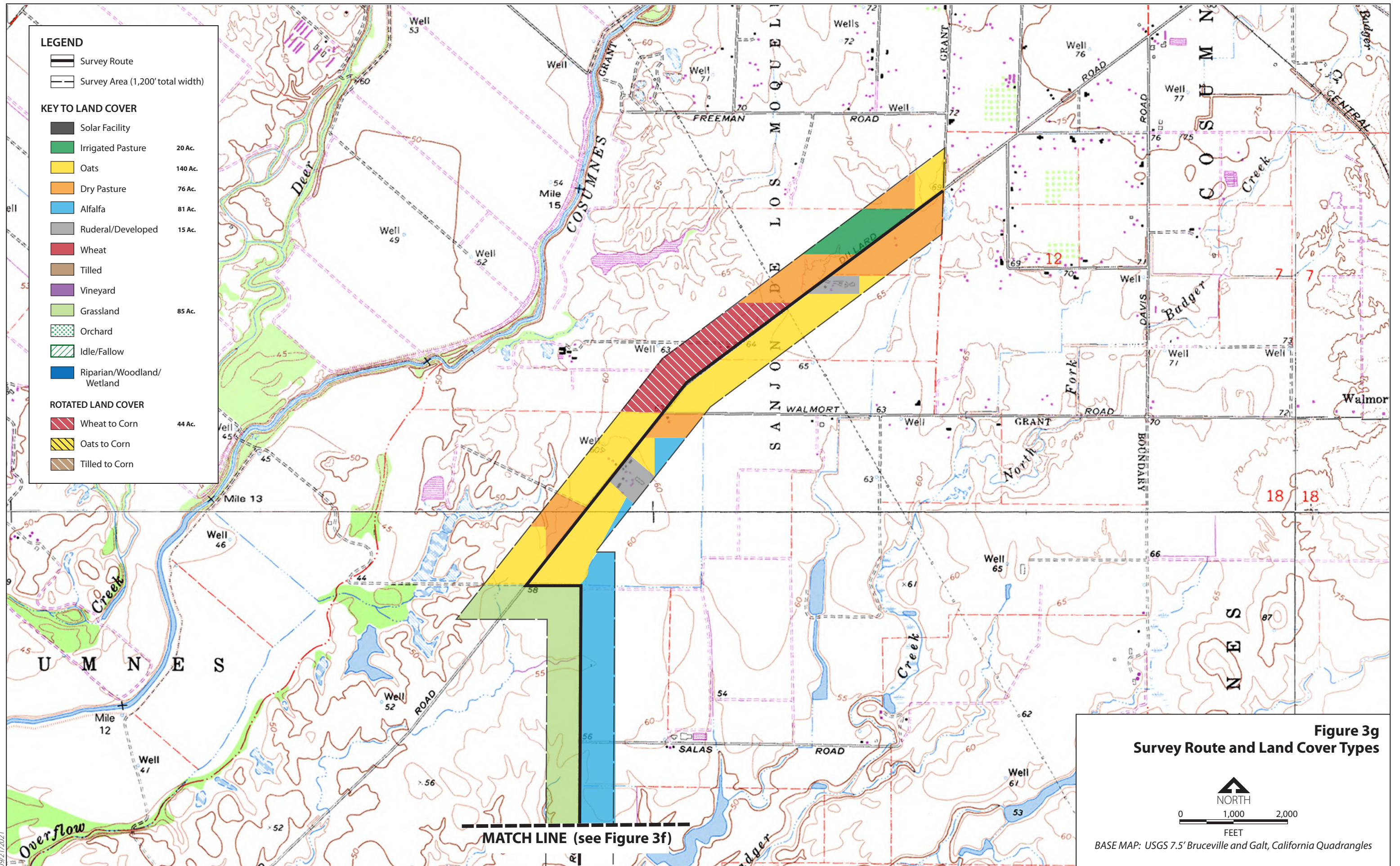
BASE MAP: USGS 7.5' Bruceville and Galt, California Quadrangles

09/21/2021

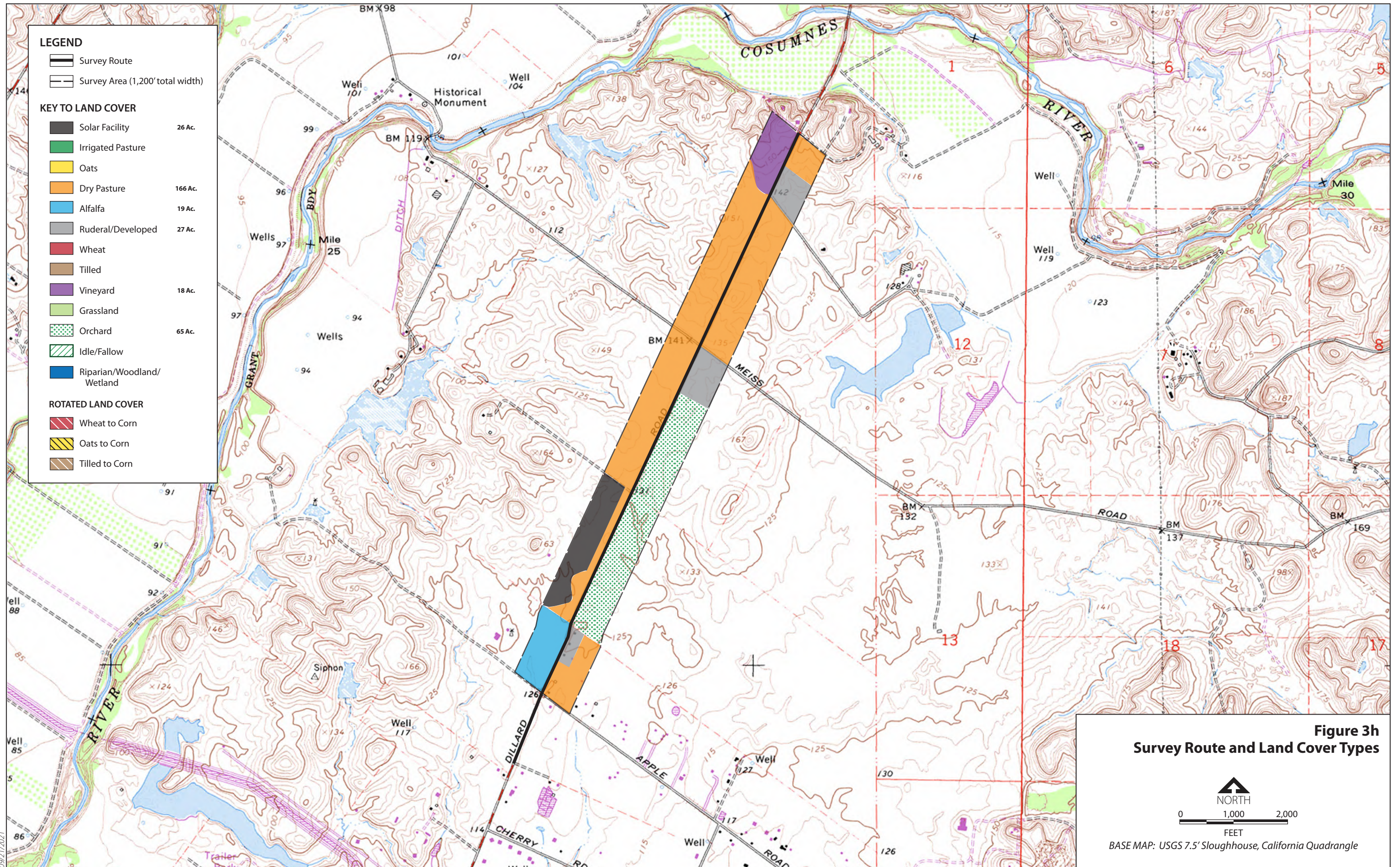














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# **Appendix B**

## Observed Species Compendium



# Plant Species

## VASCULAR SPECIES

### EUDICOTS

#### ADOXACEAE—MUSKROOT FAMILY

*Sambucus nigra*—blue elderberry

#### AMARANTHACEAE—AMARANTH FAMILY

*Amaranthus albus*—prostrate pigweed<sup>1</sup>

#### APIACEAE—CARROT FAMILY

*Conium maculatum*—poison hemlock<sup>1</sup>

*Eryngium castrense*—Great Valley eryngo

*Foeniculum vulgare*—fennel<sup>1</sup>

*Torilis arvensis*—spreading hedgeparsley<sup>1</sup>

#### ASTERACEAE—SUNFLOWER FAMILY

*Baccharis pilularis*—coyote brush

*Carduus pycnocephalus*—Italian plumeless thistle<sup>1</sup>

*Centaurea solstitialis*—yellow star-thistle<sup>1</sup>

*Dittrichia graveolens*—stinkwort<sup>1</sup>

*Erigeron canadensis*—Canadian horseweed

*Holocarpha virgata*—yellowflower tarweed

*Hypochaeris glabra*—smooth cat's ear<sup>1</sup>

*Hypochaeris radicata*—hairy cat's ear<sup>1</sup>

*Lactuca serriola*—prickly lettuce<sup>1</sup>

*Matricaria discoidea*—disc mayweed

*Psilocarphus brevissimus*—short woollyheads

*Sonchus arvensis*—field sowthistle<sup>1</sup>

*Xanthium strumarium*—cocklebur

#### BORAGINACEAE—BORAGE FAMILY

*Plagiobothrys bracteatus*—bracted popcornflower

#### BRASSICACEAE—MUSTARD FAMILY

*Brassica nigra*—black mustard<sup>1</sup>

*Lepidium latifolium*—perennial pepper weed<sup>1</sup>

#### CARYOPHYLLACEAE—PINK FAMILY

*Spergularia rubra*—red sandspurry<sup>1</sup>

**CONVOLVULACEAE—MORNING-GLORY FAMILY**

*Convolvulus arvensis*—field bindweed<sup>1</sup>

**CUCURBITACEAE—GOURD FAMILY**

*Cucurbita foetidissima*—Missouri gourd

**EUPHORBIACEAE—SPURGE FAMILY**

*Croton setiger*—dove weed

**FABACEAE—LEGUME FAMILY**

*Lupinus microcarpus*—valley lupine

*Trifolium hirtum*—rose clover<sup>1</sup>

**FAGACEAE—OAK FAMILY**

*Quercus agrifolia*—coast live oak

*Quercus lobata*—valley oak

**GERANIACEAE—GERANIUM FAMILY**

*Erodium botrys*—longbeak stork's bill<sup>1</sup>

*Erodium cicutarium*—redstem stork's bill<sup>1</sup>

**JUGLANDACEAE—WALNUT FAMILY**

*Juglans hindsii*—Northern California black walnut

**LAMIACEAE—MINT FAMILY**

*Trichostema lanceolatum*—vinegarweed

**LYTHRACEAE—LOOSESTRIFE FAMILY**

*Lythrum hyssopifolia*—hyssop loosestrife<sup>1</sup>

**MALVACEAE—MALLOW FAMILY**

*Malva parviflora*—cheeseweed mallow<sup>1</sup>

**ONAGRACEAE—EVENING PRIMROSE FAMILY**

*Epilobium brachycarpum*—tall annual willowherb

*Epilobium ciliatum*—fringed willowherb

**POLYGONACEAE—BUCKWHEAT FAMILY**

*Polygonum aviculare*—prostrate knotweed<sup>1</sup>

*Rumex crispus*—curly dock<sup>1</sup>

*Rumex dentatus*—toothed dock<sup>1</sup>

*Rumex pulcher*—fiddle dock<sup>1</sup>

**RANUNCULACEAE—BUTTERCUP FAMILY**

*Ranunculus aquatilis*—white water crowfoot

*Ranunculus sceleratus*—cursed buttercup

**ROSACEAE—ROSE FAMILY**

*Rubus armeniacus*—Himalayan blackberry<sup>1</sup>

**SALICACEAE—WILLOW FAMILY**

*Populus fremontii*—Fremont cottonwood

*Salix gooddingii*—Goodding's willow

**SOLANACEAE—NIGHTSHADE FAMILY**

*Solanum elaeagnifolium*—silverleaf nightshade<sup>1</sup>

**VERBENACEAE—VERVAIN FAMILY**

*Phyla nodiflora*—turkey tangle fogfruit

**VITACEAE—GRAPE FAMILY**

*Vitis californica*—California wild grape

**MONOCOTS**

**CYPERACEAE—SEDGE FAMILY**

*Cyperus eragrostis*—tall flatsedge

*Eleocharis macrostachya*—pale spike rush

**JUNACEAE—RUSH FAMILY**

*Juncus balticus*—Baltic rush

*Juncus effusus*—soft rush

**POACEAE—GRASS FAMILY**

*Alopecurus saccatus*—Pacific foxtail

*Avena barbata*—slender oat<sup>1</sup>

*Avena fatua*—wild oat<sup>1</sup>

*Briza minor*—little quakinggrass<sup>1</sup>

*Bromus diandrus*—ripgut brome<sup>1</sup>

*Bromus hordeaceus*—soft brome<sup>1</sup>

*Crypsis schoenoides*—swamp prickleggrass<sup>1</sup>

*Cynodon dactylon*—Bermudagrass<sup>1</sup>

*Elymus caput-medusae*—medusahead<sup>1</sup>

*Festuca myuros*—rat-tail fescue<sup>1</sup>

*Festuca perennis*—perennial rye grass<sup>1</sup>

*Gastridium phleoides*—nit grass<sup>1</sup>

*Hordeum marinum*—seaside barley<sup>1</sup>

*Hordeum murinum*—mouse barley<sup>1</sup>

*Melica californica*—California melicgrass

*Phalaris aquatica*—Harding grass<sup>1</sup>

*Poa secunda*—onesided bluegrass

*Polypogon monspeliensis*—annual rabbitsfoot grass<sup>1</sup>

**THEMIDACEAE—BRODIAEA FAMILY**

*Brodiaea elegans*—harvest brodiaea

*Triteleia laxa*—Ithuriel's spear

**TYPHACEAE—CATTAIL FAMILY**

*Typha latifolia*—broadleaf cattail

# Wildlife Species

## VERTEBRATES

### BIRDS

#### **BLACKBIRDS, ORIOLES & ALLIES**

**ICTERIDAE—BLACKBIRDS**

*Agelaius phoeniceus*—red-winged blackbird

*Agelaius tricolor*—tricolored blackbird<sup>2,3</sup>

*Euphagus cyanocephalus*—Brewer's blackbird

*Molothrus ater*—brown-headed cowbird<sup>1</sup>

#### **FALCONS**

**FALCONIDAE—CARACARAS & FALCONS**

*Falco peregrinus anatum*—American peregrine falcon<sup>1</sup>

#### **HAWKS**

**ACCIPITRIDAE—HAWKS, KITES, EAGLES, & ALLIES**

*Buteo jamaicensis*—red-tailed hawk<sup>2</sup>

*Buteo swainsoni*—Swainson's hawk<sup>2,3</sup>

*Elanus leucurus*—white-tailed kite<sup>2</sup>

*Haliaeetus leucocephalus*—bald eagle<sup>2</sup>

*Circus hudsonius*—northern harrier<sup>2</sup>

#### **HERONS & BITTERNS**

**ARDEIDAE—HERONS, BITTERNS, & ALLIES**

*Ardea alba*—great egret

*Ardea herodias*—great blue heron

#### **JAYS, MAGPIES & CROWS**

**CORVIDAE—CROWS & JAYS**

*Corvus brachyrhynchos*—American crow

*Pica nuttalli*—yellow-billed magpie<sup>2</sup>



## **NEW WORLD VULTURES**

### **CATHARTIDAE—NEW WORLD VULTURES**

*Cathartes aura*—turkey vulture

## **OWLS**

### **STRIGIDAE—TYPICAL OWLS**

*Athene cunicularia*—burrowing owl<sup>2,3</sup>

## **PIGEONS & DOVES**

### **COLUMBIDAE—PIGEONS & DOVES**

*Zenaida macroura*—mourning dove

## **SHOREBIRDS**

### **CHARADRIIDAE—LAPWINGS & PLOVERS**

*Charadrius vociferus*—killdeer

## **STARLINGS & ALLIES**

### **STURNIDAE—STARLINGS**

*Sturnus vulgaris*—European starling<sup>1</sup>

## **WATERFOWL**

### **ANATIDAE—DUCKS, GEESE, & SWANS**

*Anas platyrhynchos*—mallard

*Branta canadensis*—Canada goose

## **CRANES**

### **GRUIDAE—CRANES**

*Antigone canadensis tabida*—greater sandhill crane<sup>2</sup>

## **NEW WORLD SPARROWS**

### **PASSERELLIDAE—NEW WORLD SPARROWS**

*Melospiza melodia*—song sparrow<sup>1</sup>

## **VIREOS**

### **VIREONIDAE—VIREOS**

*Vireo* sp.—Vireo species

## **MAMMALS**

## **CANIDS**

### **CANIDAE—WOLVES & FOXES**

*Canis latrans*—coyote<sup>3</sup>

*Vulpes vulpes*—red fox<sup>1</sup>

## **HARES & RABBITS**

### LEPORIDAE—HARES & RABBITS

*Lepus californicus*—black-tailed jackrabbit

## **MUSTELIDS**

### MUSTELIDAE—WEASELS, SKUNKS, & OTTERS

*Taxidea taxus*—American badger<sup>2,3</sup>

## **POCKET GOPHERS**

### GEOMYIDAE—POCKET GOPHERS

*Thomomys bottae*—Botta's pocket gopher

## **SQUIRRELS**

### SCIURIDAE—SQUIRRELS

*Otospermophilus beecheyi*—California ground squirrel

## REPTILES

### **SNAKES**

#### COLUBRIDAE—COLUBRID SNAKES

*Thamnophis sirtalis*—common garter snake

### **TURTLES**

#### EMYDIDAE—OLD AND NEW WORLD TURTLES

*Unknown sp.*—Freshwater turtle species<sup>3</sup>

## AMPHIBIANS

### **FROGS**

#### HYLIDAE—TREE FROGS AND THEIR ALLIES

*Pseudacris regilla*—northern pacific treefrog<sup>3</sup>

## Insects

### **AQUATIC INSECTS**

#### CORIXIDAE—AQUATIC INSECTS

*Corixa sp.*—water boatmen

#### HYDRACHNELLAE—BENTHIC ARTHROPODS

Various sp.—water mites

## INVERTEBRATES

### **Crustaceans**

#### **CHIROCEPHALIDAE—FAIRY SHRIMP**

*Lindieriella occidentalis*—California lindieriella

#### **CYZICIDAE—CLAM SHRIMP**

*Cyzicus californicus*—clam shrimp

#### **CANDONIDAE**

*Cladocera sp.*—water flea species

*Copepod sp.*—freshwater copepod species

*Ostracod sp.*—seed shrimp species

- 1 Signifies introduced (non-native) species
- 2 Signifies special-status species
- 3 Signifies secondary species observation such as nest, den, burrow, skat/larvae, and/or tracks

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## **Appendix C**

### Special-Status Plants with Potential to Occur

### Appendix C. Special-Status Plants with Potential to Occur

| Scientific Name                             | Common Name           | Status (Federal/ State/ CRPR/ SSHCP) | Primary Habitat Associations, Lifeforms/ Blooming Period/ and Elevation Range (Feet)                                                                               | Potential to Occur                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------------------|-----------------------|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Arctostaphylos myrtifolia</i>            | lone manzanita        | FT/None/1B.2/None                    | Chaparral, Cismontane woodland; acidic, lone soil, clay, or sandy/ perennial evergreen shrub/ Nov–Mar/ 197–1,900.                                                  | <b>Not expected to occur.</b> Habitat for this species is absent in the PSA. The nearest known occurrence for this species is located to the east of the PSA in the ‘Carbondale’ U.S. Geological Survey (USGS) 7.5-Minute Quadrangle (Quad) (CNPS 2022; USFWS 2022).                                                                                                                                                                                                                                                      |
| <i>Brodiaea rosea</i> ssp. <i>vallicola</i> | valley brodiaea       | None/None/4.2/None                   | Valley and foothill grassland (swales), Vernal pools; Old alluvial terraces; silty, sandy, and gravelly loam/ perennial bulbiferous herb/ Apr–May (June)/33–1,095. | <b>Moderate potential to occur.</b> The PSA is within the known range of the species, and habitat for this species is present. Specifically, within the PSA suitable habitat for this species is located throughout both the solar development area and adjacent other lands in grasslands, floodplains, terraces, and vernal pools where silt, sandy or loam soils are present. The nearest known occurrence for this species is recorded approximately four miles northwest of the PSA (CDFW 2022; Jepson eFlora 2021). |
| <i>Crocانthemum suffrutescens</i>           | Bisbee Peak rush-rose | None/None/3.2/None                   | Chaparral; Often gabbroic or lone soil; often burned or disturbed areas/ perennial evergreen shrub/ Apr–Aug/ 246–2,195.                                            | <b>Not expected to occur.</b> Habitat for this species is absent in the PSA. The nearest known occurrence for this species is located to the east of the PSA in the ‘Carbondale’ USGS 7.5-Minute Quad (CNPS 2022).                                                                                                                                                                                                                                                                                                        |
| <i>Downingia pusilla</i>                    | dwarf downingia       | None/None/2B.2/Covered               | Valley and foothill grassland (mesic), Vernal pools/annual herb/ Mar–May/ 3–1,455.                                                                                 | <b>Moderate potential to occur.</b> The PSA is within the known range of the species, and habitat for the species is present. There is observed suitable habitat for this species, as well as SSHCP modeled habitat in the PSA. Specifically, within the PSA suitable habitat for this species is                                                                                                                                                                                                                         |

### Appendix C. Special-Status Plants with Potential to Occur

| Scientific Name                                 | Common Name            | Status (Federal/ State/ CRPR/ SSHCP) | Primary Habitat Associations, Lifeforms/ Blooming Period/ and Elevation Range (Feet)                                 | Potential to Occur                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------|------------------------|--------------------------------------|----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                 |                        |                                      |                                                                                                                      | located throughout both the solar development area and adjacent other lands, specifically in the vernal pools, wetlands swales and seasonal wetlands. The nearest known occurrences for this species are located west of the PSA in the 'Elk Grove' USGS 7.5-Minute Quad, and south to southwest in the 'Clay' and 'Galt' USGS 7.5-Minute Quads (CNPS 2022; Sacramento County 2018).                                                                |
| <i>Eriogonum apricum</i> var. <i>apricum</i>    | lone buckwheat         | FE/SE/1B.1/None                      | Chaparral (openings, lone soil)/perennial herb/July–Oct/197–475.                                                     | <b>Not expected to occur.</b> Habitat for this species is absent in the PSA. The nearest known occurrence for this species is located to the east of the PSA in the 'Carbondale' USGS 7.5-Minute Quad (CNPS 2022; USFWS 2022).                                                                                                                                                                                                                      |
| <i>Eriogonum apricum</i> var. <i>prostratum</i> | Irish Hill buckwheat   | FE/SE/1B.1/None                      | Chaparral (openings, lone soil)/perennial herb/ June–July/ 295–395.                                                  | <b>Not expected to occur.</b> Habitat for this species is absent in the PSA. The nearest known occurrence of this species is located to the east of the PSA in the 'Carbondale' USGS 7.5-Minute Quad (CNPS 2022; USFWS 2022).                                                                                                                                                                                                                       |
| <i>Eryngium pinnatisectum</i>                   | Tuolumne button-celery | None/None/1B.2/None                  | Cismontane woodland, Lower montane coniferous forest, Vernal pools; mesic/annual/ perennial herb/ May–Aug/230–3,000. | <b>Low potential to occur.</b> This species has not been documented in the vicinity of the PSA, but the PSA is within the known range of the species. Habitat for the species in the PSA is minimal and of low quality. Specifically, within the PSA suitable habitat for this species is located throughout both the solar development area and adjacent other lands, specifically in the vernal pools, wetlands swales and seasonal wetlands. The |

### Appendix C. Special-Status Plants with Potential to Occur

| Scientific Name              | Common Name             | Status (Federal/ State/ CRPR/ SSHCP) | Primary Habitat Associations, Lifeforms/ Blooming Period/ and Elevation Range (Feet)                                                                                         | Potential to Occur                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------|-------------------------|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              |                         |                                      |                                                                                                                                                                              | nearest known occurrences for this species are located to the east and northeast of the PSA in the 'Carbondale' and 'Folsom SE' USGS 7.5-Minute Quads (CNPS 2022).                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <i>Fritillaria agrestis</i>  | stinkbells              | None/None/4.2/None                   | Chaparral, Cismontane woodland, Pinyon and juniper woodland, Valley, and foothill grassland; Clay, Serpentinite (sometimes)/ perennial bulbiferous herb/ Mar-June/ 35-5,100. | <b>Not expected to occur.</b> Habitat for this species is absent in the PSA. The nearest known occurrence for this species is located to the east of the PSA in the 'Sloughhouse' USGS 7.5-Minute Quad (CNPS 2022).                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <i>Gratiola heterosepala</i> | Boggs Lake hedge-hyssop | None/SE/1B.2/Covered                 | Marshes and swamps (lake margins), Vernal pools; clay/ annual herb/ Apr-Aug/ 33-7,790.                                                                                       | <b>Moderate potential to occur.</b> The PSA is within the known range of the species, and suitable habitat for the species and SSHCP modeled habitat is present. Specifically, within the PSA suitable habitat for this species is located throughout both the solar development area and adjacent other lands, specifically in the vernal pools, wetlands swales and seasonal wetlands. The nearest known occurrence for this species is within five miles of the PSA, located approximately 0.85 miles southwest of the junction at Sloughhouse Road and Jackson Road (Highway 16) (CDFW 2022; CNPS 2022; Sacramento County 2018). |
| <i>Hesperivax caulescens</i> | hogwallow starfish      | None/None/4.2/None                   | Valley and foothill grassland, Vernal pools; Alkaline (sometimes)/ annual herb/ Mar-June/ 0-1,655.                                                                           | <b>Low potential to occur.</b> The PSA is within the known range of the species, and habitat for the species is present however minimal and of low quality. The nearest known occurrence for this species is                                                                                                                                                                                                                                                                                                                                                                                                                         |



**Appendix C. Special-Status Plants with Potential to Occur**

| Scientific Name                               | Common Name        | Status (Federal/ State/ CRPR/ SSHCP) | Primary Habitat Associations, Lifeforms/ Blooming Period/ and Elevation Range (Feet)               | Potential to Occur                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------------|--------------------|--------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                               |                    |                                      |                                                                                                    | located to the east of the PSA in the 'Buffalo Creek' USGS 7.5-Minute Quad (CNPS 2022).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <i>Horkelia parryi</i>                        | Parry's horkelia   | None/None/1B.2/None                  | Chaparral, Cismontane woodland; lone formation and other soils/ perennial herb/ Apr-Sep/262-3,510. | <b>Not expected to occur.</b> Habitat for this species is absent in the PSA. There are no known lone soils in the PSA. The nearest known occurrence for this species is located to the east of the PSA in the 'Carbondale' USGS 7.5-Minute Quad (CNPS 2022; USDA 2022).                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <i>Juncus leiospermus</i> var. <i>ahartii</i> | Ahart's dwarf rush | None/None/1B.2/Covered               | Valley and foothill grassland (mesic)/ annual herb/ Mar-May/ 98-750.                               | <b>Low potential to occur.</b> This species has not been documented in the vicinity of the PSA but is within the known range of the species. Habitat for the species is minimal and of low quality in the PSA, though the PSA does include SSHCP modeled habitat. Specifically, within the PSA suitable habitat for this species is located throughout both the solar development area and adjacent other lands, specifically in the vernal pools, wetlands swales and seasonal wetlands. The nearest known occurrence for this species is within five miles of the PSA, located at the southeast corner of Keifer Boulevard and Sunrise Boulevard (CNPS 2022; Sacramento County 2018). |

### Appendix C. Special-Status Plants with Potential to Occur

| Scientific Name               | Common Name      | Status (Federal/ State/ CRPR/ SSHCP) | Primary Habitat Associations, Lifeforms/ Blooming Period/ and Elevation Range (Feet)                 | Potential to Occur                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------|------------------|--------------------------------------|------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Legenere limosa</i>        | legenere         | None/None/1B.1/Covered               | Vernal pools/ annual herb/ Apr–June/ 3–2,885.                                                        | <b>Moderate potential to occur.</b> The PSA is within the known range of the species, and habitat for the species is present. There is also SSHCP modeled habitat in the PSA. Specifically, within the PSA suitable habitat for this species is located throughout both the solar development area and adjacent other lands, specifically in the vernal pools, wetlands swales and seasonal wetlands. The nearest known occurrences for this species are within five miles of the PSA, located approximately two miles northeast of the Nimbus Fish Hatchery and 1.8 miles east of the junction of Apple Road and Dillard Road (CDFW 2022; CNPS 2022; Sacramento County 2018). |
| <i>Navarretia eriocephala</i> | hoary navarretia | None/None/4.3/Covered                | Cismontane woodland, Valley, and foothill grassland; vernal mesic/ annual herb/ May–June/ 344–1,310. | <b>Moderate potential to occur.</b> The PSA is within the known range of the species, and minimal habitat for the species present. Specifically, within the PSA suitable habitat for this species is located throughout both the solar development area and adjacent other lands, specifically in the vernal pools, wetlands swales and seasonal wetlands. The nearest known occurrence for this species is located to the west of the PSA in the 'Elk Grove' USGS 7.5-Minute Quad (CNPS 2022; Jepson eFlora 2021).                                                                                                                                                            |

### Appendix C. Special-Status Plants with Potential to Occur

| Scientific Name                               | Common Name             | Status (Federal/ State/ CRPR/ SSHCP) | Primary Habitat Associations, Lifeforms/ Blooming Period/ and Elevation Range (Feet) | Potential to Occur                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------------------|-------------------------|--------------------------------------|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Navarretia myersii</i> ssp. <i>myersii</i> | pincushion navarretia   | None/None/1B.1/Covered               | Vernal pools; often acidic/ annual herb/ Apr–May/ 66–1,080.                          | <b>Moderate potential to occur.</b> The PSA is within the known range of the species, and habitat for the species is present. The PSA is also mapped as SSHCP modeled habitat for the species. Specifically, the Hadselville-Pentz and Redding Gravelly Loam soil complexes within the are slightly acidic, therefore vernal pools located in these soils provide potential suitable habitat. The nearest known occurrence for this species is within five miles of the PSA, located approximately six miles east of Highway 16, south of the Schneider Ranch property near Meiss Road (CNPS 2022; Sacramento County 2018; USDA 2022). |
| <i>Orcuttia tenuis</i>                        | slender Orcutt grass    | FT/SE/1B.1/Covered                   | Vernal pools; Often gravelly/ annual herb/ May–Sep (Oct)/ 115–5,770.                 | <b>Moderate potential to occur.</b> The PSA is within the known range of the species, and habitat for the species is present. Specifically, within the PSA suitable habitat for this species is located throughout both the solar development area and adjacent other lands, specifically in the vernal pools, wetlands swales and seasonal wetlands. Designated Critical Habitat (DCH) is located approximately four miles northwest of the PSA. A known occurrence is also recorded for this species to the west of the PSA in the 'Elk Grove' USGS 7.5-Minute Quad (CNPS 2022; USFWS 2020e; USFWS 2022).                            |
| <i>Orcuttia viscida</i>                       | Sacramento Orcutt grass | FE/SE/1B.1/Covered                   | Vernal pools/ annual herb/ Apr–July (Sep)/ 98–330.                                   | <b>Moderate potential to occur.</b> The PSA is within the known range of the species, and habitat for the species is present.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

### Appendix C. Special-Status Plants with Potential to Occur

| Scientific Name             | Common Name              | Status (Federal/ State/ CRPR/ SSHCP) | Primary Habitat Associations, Lifeforms/ Blooming Period/ and Elevation Range (Feet)                                                       | Potential to Occur                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------------|--------------------------|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                             |                          |                                      |                                                                                                                                            | Specifically, within the PSA suitable habitat for this species is located throughout both the solar development area and adjacent other lands, specifically in the vernal pools, wetlands swales and seasonal wetlands. DCH is located approximately four miles northwest of the PSA. There are also several known occurrences for this species within five miles of the PSA, including numerous locations off Kefer Boulevard near the intersection with Grant Line Road (CDFW 2022; USFWS 2020d; USFWS 2022). |
| <i>Ranunculus lobbii</i>    | Lobb's aquatic buttercup | None/None/4.2/None                   | Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland, Vernal pools/ annual herb (aquatic)/ Feb-May/ 50-1,540. | <b>Not expected to occur.</b> Habitat for this species is absent in the PSA. The nearest known occurrence for this species is located to the east of the PSA in the 'Goosecreek' USGS 7.5-Minute Quad (CNPS 2022).                                                                                                                                                                                                                                                                                              |
| <i>Sagittaria sanfordii</i> | Sanford's arrowhead      | None/None/1B.2/Covered               | Marshes and swamps (assorted shallow freshwater)/ perennial rhizomatous herb (emergent)/ May-Oct (Nov)/ 0-2,130.                           | <b>Low potential to occur.</b> The PSA is within the known range of the species, and habitat for the species is present however minimal and of low quality. The PSA also includes SSHCP modeled habitat for the species. Specifically, within the PSA, there is limited and low-quality habitat for this species (perennially inundated habitat). The nearest known occurrence for this species is within five miles of the PSA, located approximately 0.60 miles south of Meiss Road and southeast of          |



### Appendix C. Special-Status Plants with Potential to Occur

| Scientific Name | Common Name | Status (Federal/ State/ CRPR/ SSHCP) | Primary Habitat Associations, Lifeforms/ Blooming Period/ and Elevation Range (Feet) | Potential to Occur                                          |
|-----------------|-------------|--------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------|
|                 |             |                                      |                                                                                      | Sloughhouse (CDFW 2022; CNPS 2022; Sacramento County 2018). |

Sources: CDFW 2022; CNPS 2021b; Jepson eFlora 2021; Sacramento County 2018; USDA 2022; USFWS 2022; USFWS 2020c; USFWS 2020d.

**Federal Status**

FE: Federally listed as endangered.

FT: Federally listed as threatened

**State Status**

SE: State listed as endangered

**California Rare Plant Rank (CRPR) Status**

1B: plants rare, threatened, or endangered in California and elsewhere.

2B: plants rare, threatened, or endangered in California but more common elsewhere.

3: Plants about which more information is needed – A Review List.

4: Plants of limited distribution – A Watch List.

**Threat Rank**

0.1: Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat).

0.2: Moderately threatened in California (20%–80% occurrences threatened/moderate degree and immediacy of threat).

0.3: Not very threatened in California (less than 20% of occurrences threatened/low degree and immediacy of threat or no current threats known).

None: No conservation status.

**SSHCP (South Sacramento Habitat Conservation Plan)**

Covered: Currently listed as threatened or endangered under the California Endangered Species Act (CESA) or the Federal Endangered Species Act (FESA) and covered within the Plan Area by the SSHCP.

None: Not covered under the SSHCP.

**Potential for Occurrence Ranks**

Moderate Potential to Occur: the species has not been documented in the vicinity, but the Project site is within the known range of the species, and habitat for the species is present.

Low Potential to Occur: The species has not been documented in the vicinity and the PSA is within the known range of the species, but habitat for the species is of low quality.

Not Expected to Occur: The PSA is outside the known range of the species, and habitat for the species is either absent or of low quality.

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## **Appendix D**

Special-Status Wildlife with Potential to Occur

**Appendix D. Special-Status Wildlife with Potential to Occur**

| Scientific Name                | Common Name                       | Status (Federal/State/SSHCP) | Habitat                                                                                                                                                                                                                                                                   | Potential to Occur                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------|-----------------------------------|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Amphibians</b>              |                                   |                              |                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <i>Ambystoma californiense</i> | California tiger salamander (CTS) | FT/ST, WL/Covered            | Upland habitat is annual grassland, valley-foothill hardwood, and valley-foothill riparian habitats; aquatic breeding habitat is vernal pools and other ephemeral pools, and less commonly in man-made pools and along stream courses and if predatory fishes are absent. | <b>Low potential to occur.</b> This species has not been documented in the PSA, however this species is known to occur in the Project vicinity, some suitable habitat is present, as well as South Sacramento Habitat Conservation Plan (SSHCP) modeled aquatic and upland habitat (Sacramento County 2018). Specifically, there are known occurrences for this species within five miles of the PSA, located southeast of Laguna Creek, approximately 0.25 miles southeast of Katena Lane at Clay Station Road (CDFW 2022, USFWS 2022). No CTS were identified during aquatic larval surveys conducted by Dudek 2021. |
| <i>Spea hammondi</i>           | western spadefoot toad (WST)      | None/SSC/Covered             | Primarily grassland and vernal pools, but also in ephemeral wetlands that persist at least 3 weeks in chaparral, coastal scrub, valley-foothill woodlands, pastures, and other agriculture.                                                                               | <b>Moderate potential to occur.</b> This species has not been documented in the PSA, however this species is known to occur in the Project vicinity, habitat is present, as well as SSHCP modeled aquatic and upland habitat (Sacramento County 2018). There are known occurrences for this species within five miles of the PSA, located on the west side of Sloughhouse Road, approximately 0.9 miles south of Highway 16 (CDFW 2022). No WST were identified during focused field studies conducted by Dudek in 2021.                                                                                               |



**Appendix D. Special-Status Wildlife with Potential to Occur**

| Scientific Name                            | Common Name                    | Status (Federal/State/SSHCP) | Habitat                                                                                                                                                             | Potential to Occur                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------------|--------------------------------|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Fishes</b>                              |                                |                              |                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <i>Hypomesus transpacificus</i>            | Delta smelt                    | FT/SE/None                   | Sacramento–San Joaquin Delta; seasonally in Suisun Bay, Carquinez Strait, and San Pablo Bay.                                                                        | <b>Not expected to occur.</b> The PSA is just outside the known range for this species, and habitat for the species is either absent or of low quality. There are no known occurrences within five miles of the PSA (CDFW 2022, USFWS 2022).                                                                                                                                                                               |
| <i>Oncorhynchus mykiss irideus</i> pop. 11 | steelhead - Central Valley DPS | FT/None/None                 | Coastal basins from Redwood Creek south to the Gualala River, inclusive; does not include summer-run steelhead.                                                     | <b>Known to occur.</b> This species has been documented in the Cosumnes River in the PSA. There is Essential Fish Habitat (EFH) for this species located approximately 10 miles northwest of the PSA along the American River in Rancho Cordova (CDFW 2022; NOAA 2022).                                                                                                                                                    |
| <b>Reptiles</b>                            |                                |                              |                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <i>Actinemys marmorata</i>                 | northwestern pond turtle       | None/SSC/Covered             | Slow-moving permanent or intermittent streams, ponds, small lakes, and reservoirs with emergent basking sites; adjacent uplands used for nesting and during winter. | <b>Moderate potential to occur.</b> This species has not been documented in the PSA. However, this species is known to occur in the Project vicinity, and habitat and SSHCP modeled aquatic and upland habitat is present (Sacramento County 2018). There are known occurrences for this species within five miles of the PSA, located at Laguna Creek approximately 2.7 miles northeast of Clay Station Road (CDFW 2022). |
| <i>Thamnophis gigas</i>                    | giant garter snake             | FT/ST/Covered                | Freshwater marsh habitat and low-gradient streams; also uses canals and irrigation ditches.                                                                         | <b>Low potential to occur.</b> This species has not been documented in the vicinity of the PSA and the habitat on site is of low quality. There are no known occurrences within five miles of the PSA (USFWS 2022).                                                                                                                                                                                                        |

**Appendix D. Special-Status Wildlife with Potential to Occur**

| Scientific Name                              | Common Name                    | Status (Federal/State/SSHCP) | Habitat                                                                                                                                                                                                                                     | Potential to Occur                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------------|--------------------------------|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Birds</b>                                 |                                |                              |                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <i>Aechmophorus clarkii</i>                  | Clark's grebe                  | BCC/None/None                | Fresh water lakes and marshes, generally with extensive areas of open water bordered by emergent vegetation.                                                                                                                                | <b>Not expected to occur.</b> The habitat within the PSA for the species is either absent or of low quality. There are no known occurrences within five miles of the PSA (USFWS 2022).                                                                                                                                                                                                                                                                                                                                                                                                               |
| <i>Agelaius tricolor</i><br>(nesting colony) | tricolored blackbird<br>(TRBL) | BCC/SSC, ST/Covered          | Nests near freshwater, emergent wetland with cattails or tules; but also, in Himalayan blackberry; forages in grasslands, woodland, and agriculture.                                                                                        | <b>Known to occur.</b> Quality suitable habitat is present within the PSA for this species. SSHCP modeled nesting and foraging habitat is located within the western and eastern development sites (Sacramento County 2018). There are several known occurrences of this species within five miles of the PSA, with the nearest approximately 0.40 miles south of Dillard Road and the intersection of Highway 16 (CDFW 2022, USFWs 2022). This species was documented within the PSA during TRBL focused surveys conducted by Dudek in 2021. No nesting activity was observed during these surveys. |
| <i>Ardea alba</i>                            | great egret                    | None/None/None               | Nests and roosts in large trees over water or on islands, both in freshwater and marine estuarine habitats; forages in wetlands, including marshes, streams, ditches, and fish-rearing ponds, but also in irrigated pastures and croplands. | <b>Known to occur.</b> The PSA provides suitable foraging habitat for this species. There are known recorded occurrences of this species approximately 3.8 miles northeast of the PSA, specifically along the Cosumnes River across from the Rancho Murietta Airport (CDFW 2022). In addition, this species was observed during reconnaissance-level biological field surveys conducted by Dudek in 2021.                                                                                                                                                                                            |

**Appendix D. Special-Status Wildlife with Potential to Occur**

| Scientific Name                                                      | Common Name          | Status (Federal/State/SSHCP) | Habitat                                                                                                                                            | Potential to Occur                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------------------------------------|----------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Ardea Herodias</i>                                                | great blue heron     | None/None/None               | Nests in large trees or snags; forages in wetlands, water bodies, watercourses, and opportunistically in uplands, including pasture and croplands. | <b>Known to occur.</b> The PSA provides suitable foraging habitat for this species. There are known recorded occurrences of this species approximately 3.8 miles northeast of the PSA, specifically along the Cosumnes River across from the Rancho Murietta Airport (CDFW 2022). In addition, this species was observed during reconnaissance-level biological field surveys conducted by Dudek in 2021.                                                                                                                                                                                                                                                                            |
| <i>Asio otus</i>                                                     | long-eared owl       | BCC/SCC/None                 | Nests in riparian habitat, live oak thickets, other dense stands of trees, edges of coniferous forest; forages in nearby open habitats.            | <b>Moderate potential to occur.</b> The PSA is within the known range of the species, and habitat for the species is present. There are no known occurrences within five miles of the PSA (USFWS 2022).                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <i>Athene cunicularia</i><br>(burrow sites and some wintering sites) | burrowing owl (BUOW) | BCC/SSC/Covered              | Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows.                                            | <b>Known to occur.</b> There is suitable habitat for this species in the PSA, as well as recorded presence. One BUOW was recorded as occupying an exposed pipe on APN 126-0110-001 during a November 2018 site visit, and presumably the same BUOW was observed the following day within APN 126-0110-003. There is some SSHCP modeled wintering habitat within the western and eastern development sites (Sacramento County 2018). There are additional known occurrences for this species within five miles of the PSA (CDFW 2022). Active burrows and BUOW presence were observed within the PSA during protocol-level surveys conducted by Dudek in 2021. No active burrows were |

**Appendix D. Special-Status Wildlife with Potential to Occur**

| Scientific Name                                     | Common Name            | Status (Federal/State/SSHCP) | Habitat                                                                                                                                                                                                                                            | Potential to Occur                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------------------------------|------------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                     |                        |                              |                                                                                                                                                                                                                                                    | observed within the PSA during protocol-level surveys conducted by Dudek in 2021                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <i>Aquila chrysaetos</i><br>(nesting and wintering) | golden eagle           | BCC, FP/WL/None              | Nests and winters in hilly, open/semi-open areas, including shrublands, grasslands, pastures, riparian areas, mountainous canyon land, open desert rimrock terrain; nests in large trees and on cliffs in open areas and forages in open habitats. | <b>Low potential for occurrence.</b> The PSA provides suitable foraging habitat for this species. There are no known occurrences of this species within five miles of the PSA (USFWS 2022).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <i>Baeolophus inornatus</i>                         | oak titmouse           | BCC/None/None                | Nests and forages in oak woodlands; also, open pine forest, pinyon woodland, and riparian and chaparral with oak.                                                                                                                                  | <b>Not expected to occur.</b> The habitat within the PSA for the species is either absent or of low quality. There are no known occurrences within five miles of the PSA (USFWS 2022).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <i>Buteo swainsoni</i><br>(nesting)                 | Swainson's hawk (SWHA) | BCC/ST/Covered               | Nests in riparian, open woodland, and savanna, and in isolated large trees; forages in nearby grasslands and agricultural areas such as wheat and alfalfa fields and pasture.                                                                      | <b>Known to occur.</b> There are known occurrences for this species within the PSA (CDFW 2022). One SWHA was observed foraging in the undeveloped portion of APN 126-0110-003 during the November 2018 site visit. The SSHCP shows several SWHA nesting occurrences along the riparian habitat adjacent to the Cosumnes River, including at the northern edge of APN 126-0110-001 (Sacramento County 2018). Suitable nesting habitat is concentrated along the Cosumnes River corridor, and suitable foraging habitat is located throughout the PSA. SWHA were observed foraging and courting within the PSA and within 0.5 mile of the PSA during protocol-level surveys conducted by Dudek in 2021 and 2022. Observations were |



**Appendix D. Special-Status Wildlife with Potential to Occur**

| Scientific Name                  | Common Name            | Status (Federal/State/SSHCP) | Habitat                                                                                                                                                                                             | Potential to Occur                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------------------|------------------------|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                  |                        |                              |                                                                                                                                                                                                     | concentrated to the western vicinity of the PSA, within the adjacent other lands. No nesting activity was observed during these surveys.                                                                                                                                                                                                                                                                                                                                                                                                  |
| <i>Chamaea fasciata</i>          | wrentit                | BCC/None/None                | Primarily coastal scrub and chaparral, but also riparian habitats, oak woodland, mixed hardwood, and mixed conifer forests.                                                                         | <b>Not expected to occur.</b> The habitat within the PSA for the species is either absent or of low quality. There are no known occurrences within five miles of the PSA (USFWS 2022).                                                                                                                                                                                                                                                                                                                                                    |
| <i>Chlidonias niger</i>          | black tern             | BCC/SSC/None                 | Freshwater marsh with emergent vegetation; in the Central Valley primarily nests and forages in rice fields and other flooded agricultural fields with weeds and other residual aquatic vegetation. | <b>Low potential for occurrence.</b> The PSA provides suitable foraging habitat for this species. There are no known occurrences of this species within five miles of the PSA (USFWS 2022).                                                                                                                                                                                                                                                                                                                                               |
| <i>Contopus cooperi</i>          | olive-sided flycatcher | BCC/SSC/None                 | Nests in mixed-conifer, montane hardwood-conifer, Douglas-fir, redwood, red fir, and lodgepole pine habitats; usually close to water.                                                               | <b>Not expected to occur.</b> The habitat within the PSA for the species is either absent or of low quality. There are no known occurrences within five miles of the PSA (USFWS 2022).                                                                                                                                                                                                                                                                                                                                                    |
| <i>Elanus leucurus</i> (nesting) | white-tailed kite      | None/FP/Covered              | Nests in woodland, riparian, and individual trees near open lands; forages opportunistically in grassland, meadows, scrubs, agriculture, emergent wetland, savanna, and disturbed lands.            | <b>Known to occur.</b> There are known occurrences for this species within the PSA (CDFW 2022). The SSHCP shows one white-tailed kite occurrence and modeled nesting habitat along the riparian habitat adjacent to the Cosumnes River at the northern edge of APN 126-0110-001. There is also SSHCP modeled foraging habitat within the site (Sacramento County 2018). This species was observed during reconnaissance-level biological field surveys conducted by Dudek in 2021. No nesting activity was observed during these surveys. |

**Appendix D. Special-Status Wildlife with Potential to Occur**

| Scientific Name                                         | Common Name            | Status (Federal/State/SSHCP) | Habitat                                                                                                                                                                    | Potential to Occur                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------------------------------|------------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Geothlypis trichas sinuosa</i>                       | common yellowthroat    | BCC/SSC/None                 | Nests and forages in emergent wetlands including woody swamp, brackish marsh, and freshwater marsh.                                                                        | <b>Low potential for occurrence.</b> The PSA provides suitable foraging habitat for this species. There are no known occurrences of this species within five miles of the PSA (USFWS 2022).                                                                                                                                                                                                                                              |
| <i>Haliaeetus leucocephalus</i> (nesting and wintering) | bald eagle             | FDL, BCC/SE/None             | Nests in forested areas adjacent to large bodies of water, including seacoasts, rivers, swamps, large lakes; winters near large bodies of water in lowlands and mountains. | <b>Known to occur.</b> Nesting habitat for the species is either absent or of low quality, however foraging habitat for this species is present within the PSA. There are no known occurrences of this species within five miles of the PSA (CDFW 2020, USFWS 2022). This species was observed in various locations throughout the PSA and vicinity during the reconnaissance-level biological field surveys conducted by Dudek in 2021. |
| <i>Limnodromus griseus</i>                              | Short-billed dowitcher | BCC/None/None                | Coastal mud flats and brackish lagoons.                                                                                                                                    | <b>Not expected to occur.</b> The habitat within the PSA for the species is either absent or of low quality. There are no known occurrences within five miles of the PSA (USFWS 2022).                                                                                                                                                                                                                                                   |
| <i>Pica nuttalli</i>                                    | yellow-billed magpie   | BCC/None/None                | Nests and forages in open oak and riparian woodland; also farm and ranchlands with large trees.                                                                            | <b>Known to Occur.</b> The PSA is within the known range of the species, and habitat for the species is present (USFWS 2022). In addition, this species was observed during reconnaissance-level biological field surveys conducted by Dudek in 2021.                                                                                                                                                                                    |
| <i>Picoides nuttallii</i>                               | Nuttall's woodpecker   | BCC/None/None                | Primarily oak woodlands, but also riparian woodland, chaparral, and rarely conifer forests.                                                                                | <b>Low potential for occurrence.</b> The PSA provides suitable foraging habitat for this species. There are no known occurrences of this species within five miles of the PSA (USFWS 2022).                                                                                                                                                                                                                                              |

**Appendix D. Special-Status Wildlife with Potential to Occur**

| Scientific Name                          | Common Name                              | Status (Federal/State/SSHCP) | Habitat                                                                                                                                             | Potential to Occur                                                                                                                                                                                                                                                                                                                                    |
|------------------------------------------|------------------------------------------|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Riparia riparia</i><br>(nesting)      | bank swallow                             | None/ST/None                 | Nests in riparian, lacustrine, and coastal areas with vertical banks, bluffs, and cliffs with sandy soils; open country and water during migration. | <b>Moderate potential for occurrence.</b> The PSA provides suitable migratory habitat for this species but is outside the breeding range for this species. There are known occurrences of this species within five miles of the PSA, located on the Cosumnes River approximately 0.25 miles downstream of Bridge House (CDFW 2022, Cornell Lab 2021). |
| <i>Spinus lawrencei</i>                  | Lawrence's goldfinch                     | BCC/None/None                | Nests and forages in open oak, arid woodlands, and chaparral near water.                                                                            | <b>Low potential for occurrence.</b> The PSA provides suitable foraging habitat for this species. There are no known occurrences of this species within five miles of the PSA (USFWS 2022).                                                                                                                                                           |
| <i>Tringa semipalmata</i>                | willet                                   | BCC/None/None                | Breeds in and adjacent to wetlands. Overwinters in mudflat, marsh, sandy beach, and rocky coast habitats.                                           | <b>Not expected to occur.</b> The habitat within the PSA for the species is either absent or of low quality. There are no known occurrences within five miles of the PSA (USFWS 2022).                                                                                                                                                                |
| <b>Insects</b>                           |                                          |                              |                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                       |
| <i>Danaus plexippus</i>                  | Monarch butterfly                        | FC/None/None                 | Wind-protected tree groves with nectar sources and nearby water sources.                                                                            | <b>Not expected to occur.</b> The habitat within the PSA for the species is either absent or of low quality. There are no known occurrences within five miles of the PSA (USFWS 2022).                                                                                                                                                                |
| <i>Desmocerus californicus dimorphus</i> | valley elderberry longhorn beetle (VELB) | FT/None/Covered              | Occurs only in the Central Valley of California, in association with blue elderberry ( <i>Sambucus nigra</i> ssp. <i>caerulea</i> ).                | <b>Known to occur.</b> There is suitable habitat for this species within the PSA, specifically observed elderberry shrubs ( <i>Sambucus</i> sp.). In addition, there are known occurrences of this species documented in the western part of the PSA (CDFW 2022, USFWS 2022). During VELB                                                             |

**Appendix D. Special-Status Wildlife with Potential to Occur**

| Scientific Name                 | Common Name                         | Status (Federal/State/SSHCP) | Habitat                                                                                        | Potential to Occur                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------|-------------------------------------|------------------------------|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 |                                     |                              |                                                                                                | focused surveys conducted by Dudek in 2021, no presence or ancillary data for this (e.g., bore holes, scat) were observed when assessing elderberry shrubs within the PSA.                                                                                                                                                                                                     |
| <i>Dumontia oregonensis</i>     | hairy water flea                    | None/None/None               | Vernal pools; in California, known only from Mather Field,                                     | <b>Low potential for occurrence.</b> The PSA provides marginal suitable habitat for this species. There are known occurrences for this species within 5 miles of the PSA, specifically at Mather Field (CDFW 2022)                                                                                                                                                             |
| <i>Hydrochara rickseckeri</i>   | Ricksecker's water scavenger beetle | None/None/Covered            | Aquatic                                                                                        | <b>Moderate potential to occur.</b> The PSA is within the known range of the species, and habitat for the species is present. There are several potential vernal pools and SSHCP modeled habitat within the PSA (County of Sacramento et al. 2018). There are known occurrences for this species within 5 miles of the PSA, located at Mather Field Regional Park (CDFW 2022). |
| <b>Invertebrates</b>            |                                     |                              |                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                |
| <i>Branchinecta conservatio</i> | Conservancy fairy shrimp            | FE/None/None                 | Larger, more turbid vernal pools, playa pools.                                                 | <b>Not expected to occur.</b> The PSA is outside the known range of the species, and habitat for the species is either absent or of low quality. This species is known to occur in 10 populations; the closest two are Yolo Bypass Wildlife Area in Yolo County and Jepson Prairie in Solano County (USFWS 2012, USFWS 2022).                                                  |
| <i>Branchinecta lynchi</i>      | vernal pool fairy shrimp            | FT/None/Covered              | Vernal pools, seasonally ponded areas within vernal swales, and ephemeral freshwater habitats. | <b>Low potential to occur.</b> This species has not been documented in the PSA; however, this species is known to occur in                                                                                                                                                                                                                                                     |



**Appendix D. Special-Status Wildlife with Potential to Occur**

| Scientific Name            | Common Name             | Status (Federal/State/SSHCP) | Habitat                                                                                                                  | Potential to Occur                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------|-------------------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                            |                         |                              |                                                                                                                          | the PSA vicinity. Suitable habitat and SSHCP modeled habitat are present in the PSA, including vernal pools (Sacramento County 2018). There are various Designated Critical Habitat (DCH) areas for this species within five miles of the PSA, with the nearest 1.3 miles southeast of the PSA (USFWS 2022). There are several known occurrences for this species within five miles of the PSA, with the nearest being located within 0.25 miles of the PSA on the south side of Meiss Road, approximately 0.75 miles southeast of the Dillard Road intersection (CDFW 2022). Protocol-level wet and dry season large listed branchiopod surveys conducted in 2020 through 2021 yielded no presence (SSLIC 2021a-b). |
| Branchinecta mesovallensis | mid-valley fairy shrimp | None/None/Covered            | Small, shallow, grass-bottomed, ephemeral vernal pools and swales; also, artificial habitats such as railroad toe-drains | <b>High potential to occur.</b> This species has not been documented in the PSA, however this species is known to occur in the Project vicinity, suitable habitat is present including vernal pools in the PSA, as well as modeled habitat (County of Sacramento et al. 2018). There are various known occurrences for this species within 5 miles of the PSA, with the nearest being located northwest of the junction at Florin Road and Sunrise Boulevard on the north and south sides of Highway 16 (CDFW 2022).                                                                                                                                                                                                 |

**Appendix D. Special-Status Wildlife with Potential to Occur**

| Scientific Name                 | Common Name                | Status (Federal/State/SSHCP) | Habitat                                                                                                            | Potential to Occur                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------|----------------------------|------------------------------|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Lepidurus packardi</i>       | vernal pool tadpole shrimp | FE/None/Covered              | Ephemeral freshwater habitats including alkaline pools, clay flats, vernal lakes, vernal pools, and vernal swales. | <b>Known to occur.</b> This species has historically been documented in the PSA, and suitable habitat and SSHCP modeled habitat is present in the PSA, including vernal pools (Sacramento County 2018). There are various DCH areas for this species within five miles of PSA, with the nearest 1.3 miles southeast of the PSA (USFWS 2022). This species has known occurrences within the PSA (CDFW 2022). Protocol-level wet and dry season large listed branchiopod surveys conducted in 2020 through 2021 yielded no presence (SLLC 2021a-b). |
| <i>Linderiella occidentalis</i> | California linderiella     | None/None/None               | Cool soft-water vernal pools in grasslands below 1,000 feet above mean sea level                                   | <b>Known to occur.</b> The PSA provides suitable aquatic habitat for this species. The nearest recorded observation is approximately 1.3 miles southeast of the PSA off Apple Road (CDFW 2022). This species was observed during Protocol-level wet season large listed branchiopod surveys conducted in 2021 (SLLC 2021b).                                                                                                                                                                                                                       |
| <b>Mammals</b>                  |                            |                              |                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <i>Taxidea taxus</i>            | American badger            | None/SSC/Covered             | Dry, open, treeless areas; grasslands, coastal scrub, agriculture, and pastures, especially with friable soils.    | <b>High potential to occur.</b> This species has not been documented in the PSA. However, this species is known to occur in the Project vicinity, and suitable habitat and SSHCP modeled habitat is present (Sacramento County 2018). There are known occurrences for this species within five miles of the PSA, with one located 0.4 miles east of Sunrise Boulevard in                                                                                                                                                                          |

### Appendix D. Special-Status Wildlife with Potential to Occur

| Scientific Name | Common Name | Status (Federal/State/SSHCP) | Habitat | Potential to Occur                                                                                                                                                                          |
|-----------------|-------------|------------------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 |             |                              |         | southeast Rancho Cordova (CDFW 2022). A den characteristic of this species was observed within the PSA during the reconnaissance-level biological field surveys conducted by Dudek in 2021. |

**Sources:** CDFW 2022; Cornell Lab 2021; NOAA 2022; Sacramento County 2018; SLLC 2021a-b; USFWS 2002a; USFWS 2012; USFWS 2022.

**Federal Status**

- BCC: USFWS Bird of Conservation Concern
- FDL: Federally delisted
- FE: Federally listed as endangered
- FP: Fully Protected
- FT: Federally listed as threatened

**State Status**

- FP: fully protected
- SSC: Species of Special Concern
- ST: State listed as threatened
- WL: Watch List
- None: No conservation status
- None: No conservation status.

**SSHCP (South Sacramento Habitat Conservation Plan)**

- Covered: Currently listed as threatened or endangered under the California Endangered Species Act (ESA) or the federal ESA and covered within the Plan Area by the SSHCP.
- None: Not covered under the SSHCP.

**Potential for Occurrence Ranks**

- Known to Occur: The species has been documented in the PSA.
- High Potential to Occur: The species has not been documented in the Project site but is known to occur in the vicinity and species habitat is present.
- Moderate Potential to Occur: The species has not been documented in the vicinity, but the PSA is within the known range of the species, and habitat for the species is present.
- Low Potential to Occur: The species has not been documented in the vicinity and the PSA is within the known range of the species, but habitat for the species is of low quality. is either absent or of low quality.
- Not Expected to Occur: The Project site is outside the known range of the species, and habitat for the species is either absent or of low quality.

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# **Appendix E**

## Photo Record

APPENDIX E  
PHOTO LOG



**Photo 1:** Example of an aquatic resource/wetland feature within the Project Study Area (PSA).



**Photo 2:** Annual grassland and general overview of the PSA.





Photo 3: Annual grassland and general overview of the PSA.



Photo 4: Example of an aquatic resource/pond feature within PSA, adjacent to annual grasslands.



Photo 5: Grading within the PSA during the October/November field surveys.



Photo 6: Example of an aquatic resource/vernal pool feature within PSA, showing the concentric rings of hydrophytic vegetation. Adjacent to annual grassland (i.e., upland habitat).



APPENDIX E  
PHOTO LOG

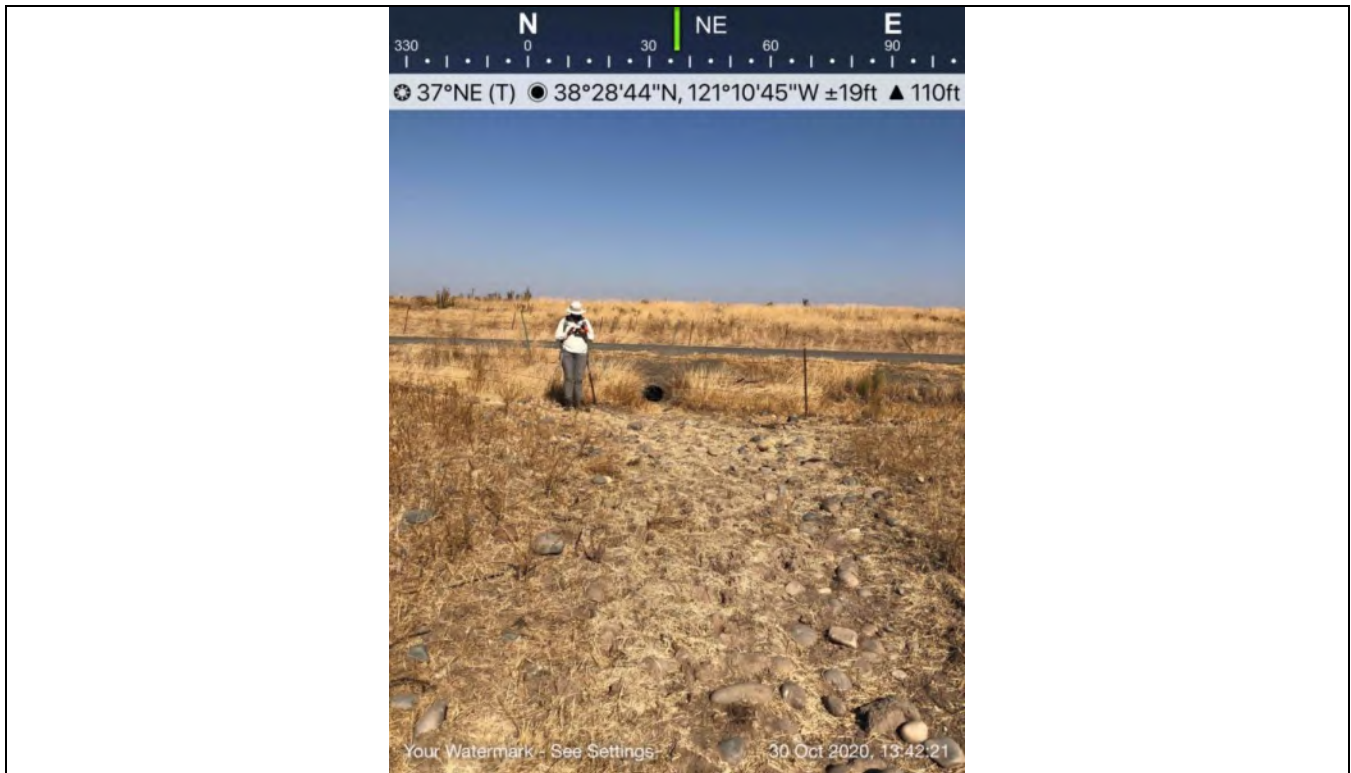


Photo 7: Upland vegetation within the PSA.



Photo 8: Western vicinity of PSA, agricultural land cover.

APPENDIX E  
PHOTO LOG



**Photo 9:** PSA and Intersection at Meiss Road.



**Photo 10:** A portion of the Cosumnes River flowing within the western boundary of the PSA.





**Photo 11:** Annual grassland and seasonal wetland, and general overview of the PSA.



**Photo 12:** Annual grassland/uplands, and general overview of the PSA. Existing solar facility in the foreground.

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# **Appendix H**

## SSHCP Consistency Analysis for the Sloughouse Solar Farm Project

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South Sacramento Habitat Conservation  
Plan Consistency Analysis

**Sloughhouse Solar Farm -**  
Alternative Project Site Plan (ASP)

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**JULY 2022**

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# Acronyms and Abbreviations

| Acronym/Abbreviation | Definition                                 |
|----------------------|--------------------------------------------|
| AMM                  | Avoidance And Minimization Measure         |
| ARP                  | Aquatic Resources Program                  |
| BMP                  | Best Management Practice                   |
| BTR                  | Biological Technical Report                |
| BUOW                 | Burrowing owl                              |
| CDFW                 | California Department of Fish and Wildlife |
| CEQA                 | California Environmental Quality Act       |
| County               | County of Sacramento                       |
| CTS                  | California tiger salamander                |
| ESA                  | Endangered Species Act                     |
| PGP                  | Programmatic General Permit                |
| PMP                  | Preserve Management Plan                   |
| PPU                  | Preserve Planning Unit                     |
| Project              | Sloughhouse Solar Project                  |
| PSA                  | Project Study Area                         |
| RWQCB                | Regional Water Quality Control Board       |
| SSCA                 | South Sacramento Conservation Agency       |
| SSHCP                | South Sacramento Habitat Conservation Plan |
| SWHA                 | Swainson's hawk                            |
| TRBL                 | Tricolored blackbird                       |
| UDA                  | Urban Development Area                     |
| USACE                | U.S. Army Corps of Engineers               |
| USFWS                | U.S. Fish and Wildlife Service             |
| VELB                 | Valley elderberry longhorn beetle          |
| WEAP                 | Worker Environmental Awareness Program     |
| WST                  | Western spadefoot (toad)                   |
| WPT                  | (North)western pond turtle                 |

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# 1 Introduction

This South Sacramento Habitat Conservation Plan (SSHCP) Consistency Analysis for the Sloughhouse Solar Project (Project) supplements the Final Biological Technical Report (BTR; Dudek July 2022) by providing an in-depth evaluation of the Project Alternative Site Plan's consistency with the SSHCP.

## 1.1 Project Overview

The Project is a solar photovoltaic energy-generating facility located on the southwest corner of Meiss Road and Dillard Road, adjacent to an existing solar energy facility (Dillard Road Solar Power Facility) located at 7794 Dillard Road, Sacramento County, California. The Project would construct, operate, and decommission a solar generation and energy storage facility within a solar development area of approximately 371.12 acres. The solar development area, or the limits of disturbance, is inclusive of solar fields, energy storage, substation[s], roads, retention basins, and all other Project infrastructure. The Project may also include additional auxiliary facilities such as raw water/fire water storage, treated water storage, stormwater retention basins, water filtration buildings and equipment, equipment control buildings, septic system(s), and parking within the solar development area. The design and construction of the buildings, solar arrays (panels, etc.), energy storage facilities, and auxiliary facilities will be consistent with Sacramento County building standards.

## 1.2 Project Location

The approximately 732.26-acre Project Study Area (PSA) is located at the southwest corner of the intersection of Meiss Road and Dillard Road in Sloughhouse, an unincorporated area in eastern Sacramento County (Figure 1, Project Location). The PSA is comprised of the solar development area (371.72 acres), and adjacent other lands (360.54 acres). The southeast portion of the PSA is comprised of an existing solar facility (Dillard Road Solar Power Facility). The remainder of the PSA is largely comprised of vacant lands used for cattle ranching. The PSA is surrounded by rural residences, specifically Simpson Ranch to the south, two caviar aquaculture farms to the north, orchards and a turkey farm to the east, and row crops and the Cosumnes River to the west. The PSA can be accessed from gates off both Dillard Road and Meiss Road (Figure 2, Project Setting).

The PSA is located within the SSHCP Plan Area.

## 1.3 Purpose of the Consistency Analysis

The purpose of this analysis is to evaluate consistency of the Project's impacts and compensatory mitigation relative to the final approved and adopted SSHCP (County of Sacramento et al. 2018).

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## 2 Background on the SSHCP

The SSHCP is a regional plan that allows project proponents within the Plan Area to expedite federal and state Endangered Species Act (ESA) permitting. The SSHCP permittees (i.e., County of Sacramento [County], City of Rancho Cordova, City of Galt, Sacramento County Water Agency, and the Southeast Connector Joint Powers Authority) received Incidental Take Permits for certain project activities covered by the SSHCP, and the County and Cities can extend incidental take permit coverage under their ITPs to third-part project proponents covered activities. The SSHCP also integrates with an Aquatic Resources Program (ARP) that allowed the U.S. Army Corps of Engineers (USACE) to issue a Programmatic General Permit (PGP) for SSHCP covered activities. The PGP allows many Clean Water Act impacts to be mitigated through the SSHCP, without separately applying for USACE permit coverage. For impacts that exceed the thresholds of the PGP (generally 2 acres), the USACE has developed an expedited process for issuance of Letters of Permission or Individual Permits to covered activities. The Regional Water Quality Control Board (RWQCB) and California Department of Fish and Wildlife (CDFW) are unable to delegate the approval authority to the SSHCP permittees but have established an expedited permitting approval process for covered activities.

The approximately 317,600-acre SSHCP Plan Area is in the southern portion of Sacramento County and is broken into two components: areas within the Urban Development Area (UDA) and certain areas outside the UDA. The SSHCP identified eight types of covered activities: urban developing in the UDA, mining in the UDA, rural transportation projects, recycled water projects, covered activities in preserve setbacks in the UDA, covered activities in stream setbacks in the UDA, SSHCP Preserve System covered activities, and covered activities in the Laguna Creek Wildlife Corridor of the preserve (SSHCP Section 5.2). Solar development outside the UDA is not prohibited but is also not analyzed in the SSHCP or its environmental document. Only activities that Sacramento County determines were analyzed in those documents could be considered as covered activities using the existing SSHCP permits.

The Project is located within the SSHCP Plan Area outside the UDA. The SSHCP does not explicitly cover utility-scale solar projects and the Project is located outside the UDA. . As described in SSHCP Section 1.2.5, the SSHCP “does not preclude activities from occurring outside the UDA, provided they obtain the legally required local, state, and federal permits and approvals otherwise and customarily required, including mitigation for impacts caused by those activities.” The SSHCP acknowledges that the County General Plan provides for land uses that are not SSHCP covered activities, but that are within the SSHCP Plan area. (SSHCP, at pp. 5-61 - 5-65.). Therefore, species take permits for any listed species and wetlands impact permits would need to be obtained by other means separate from the SSHCP.

### 2.1 SSHCP Conservation Strategy

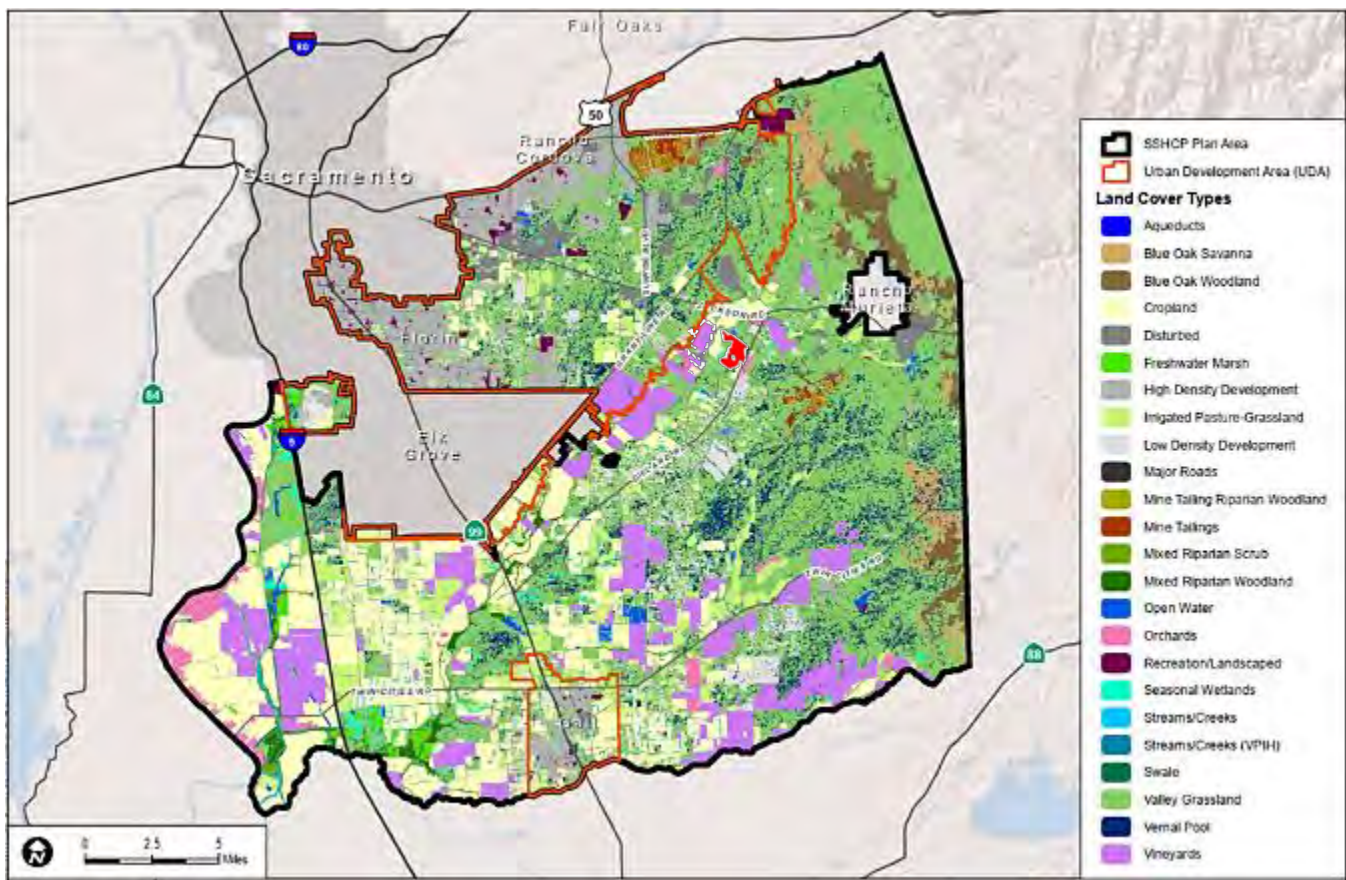
The SSHCP Conservation Strategy is built around avoidance and minimization measures for covered activities (Avoidance and Minimization Measures [AMMs]; SSHCP Section 5.4), biological goals and objectives (SSHCP Section 7.3), and development of a Preserve System (SSHCP Section 7.4) for the land covers and Covered Species of the plan. Most of the biological goals and objectives are tied to how the Preserve System is assembled, but some objectives are separate from Preserve System assembly.

## 2.1.1 SSHCP Land Covers

SSHCP Section 3.2 describes the land cover types addressed by the plan. Natural land cover categories that have habitat value include the following:

- **Wetland Waters:** Vernal pool, swale, seasonal wetland, and freshwater marsh,
- **Non-Wetland Waters:** Stream/creek (vernal pool invertebrate habitat), stream/creek, and open water,
- **Riparian:** Mixed riparian woodland, mixed riparian scrub, and mine tailings riparian woodland, and
- **Terrestrial:** Valley grassland, blue oak savanna, blue oak woodland, cropland, orchard, vineyard, and irrigated pasture.

Other developed/non-habitat land cover in the Plan Area includes aqueduct, disturbed, high-intensity development, low-intensity development, major roads, mine tailings, recreation/landscaped, and not-mapped. See Exhibit 1 for the map of SSHCP land cover types within the Plan Area (SSHCP Figure 3-1). This land cover mapping provides the baseline for calculation of SSHCP covered activity impacts and fees, as well preliminary assessment of preserve parcel value.



**Exhibit 1.** SSHCP Land Cover Types Map (County of Sacramento et al. 2018) with Project Solar Development Area (shown in red).

## 2.1.2 SSHCP Covered Species

The SSHCP addresses 28 Covered Species (20 wildlife species and 8 plant species; “\*” denotes those species that are listed as threatened or endangered under the federal and/or state ESA), including the following:

- **Invertebrates:** Vernal pool tadpole shrimp\* (*Lepidurus packardii*), vernal pool fairy shrimp\* (*Branchinecta lynchi*), mid-valley fairy shrimp (*Branchinecta mesovallensis*), valley elderberry longhorn beetle\* (VELB; *Desmocerus californicus dimorphus*), and Ricksecker’s water scavenger beetle (*Hydrochara rickseckeri*).
- **Amphibians:** California tiger salamander\* (CTS; Central Valley population, *Ambystoma californiense*) and western spadefoot (WST; *Spea hammondi*).
- **Reptiles:** Northwestern Pond turtle (WPT; *Actinemys marmorata*) and giant gartersnake\* (*Thamnophis gigas*).
- **Birds:** Cooper’s hawk (*Accipiter cooperii*), tricolored blackbird\* (TRBL; *Agelaius tricolor*), western burrowing owl (BUOW; *Athene cunicularia hypugaea*), ferruginous hawk (*Buteo regalis*), Swainson’s hawk\* (SWHA; *Buteo swainsoni*), northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), greater sandhill crane\* (*Grus canadensis tabida*), and loggerhead shrike (*Lanius ludovicianus*).
- **Mammals:** Western red bat (*Lasiurus blossevillii*) and American badger (*Taxidea taxus*); and
- **Plants:** Dwarf downingia (*Downingia pusilla*), Boggs Lake hedge-hyssop\* (*Gratiola heterosepala*), Ahart’s dwarf rush (*Juncus leiospermus* var. *ahartii*), legenere (*Legenere limosa*), pincushion navarretia (*Navarretia myersii*), slender Orcutt grass\* (*Orcuttia tenuis*), Sacramento Orcutt grass\* (*Orcuttia viscida*), and Sanford’s arrowhead (*Sagittaria sanfordii*).

## 2.1.3 SSHCP Avoidance and Minimization Measures

SSHCP Section 5.4 includes AMMs (SSHCP AMMs) that are intended to be implemented, as appropriate, for covered activities under the plan to avoid or minimize direct and indirect impacts to Covered Species and their habitats. The SSHCP permittees (e.g., the County) are responsible for ensuring that covered activities authorized under the plan implement the SSHCP AMMs appropriate to those projects/activities.

### General Avoidance and Minimization Measures

- **Condition 1. Avoid And Minimize Urban Development Impacts to Watershed Hydrology and Water Quality:** SSHCP AMMs include LID-1 (Stormwater Quality), LID-2 (Groundwater Recharge), and LID-3 (Natural Site Features).
- **Condition 2. Avoid and Minimize Urban Development Direct and Indirect Impacts to Existing Preserves and SSHCP Preserves:** SSHCP AMMs include EDGE-1 (Compatible Land Uses), EDGE-2 (Single-Loaded Streets), EDGE-3 (Preserve Setbacks), EDGE-3a (Setback Recreational Trails), EDGE-3b (Setback Firebreaks), EDGE-3c (Setback Shade Trees and Landscaping), EDGE-4 (Locate Stormwater Control Outside Preserves), EDGE-5 (Stormwater Control in Preserve Setbacks), EDGE-6 (Detention Basins in Linkage Preserves), EDGE-7 (Hardpan/Duripan Protection), EDGE-8 (Outdoor Lighting), EDGE-9 (Livestock Access to Preserves), and EDGE-10 (Prevent Invasive Species Spread).
- **Condition 3. Implement Construction Best Management Practices:** SSHCP AMMs include BMP-1 (Construction Fencing), BMP-2 (Erosion Control), BMP-3 (Equipment Storage and Fueling), BMP-4 (Erodible Materials), BMP-5 (Dust Control), BMP-6 (Construction Lighting), BMP-7 (Biological Monitor), BMP-8

(Training of Construction Staff), BMP-9 (Soil Compaction), BMP-10 (Revegetation), and BMP-11 (Speed Limit).

- **Condition 4. Avoid and Minimize Impacts that may Result from Implementation of Covered Transportation Projects:** SSHCP AMMs include ROAD-1 (Road Project Location), ROAD-2 (Wildlife Crossing Structures), and Road-3 (Roadside Pesticide Use).
- **Condition 5. Avoid and Minimize Impacts that Result from Public Use of Low-Impact Nature Trails in Preserves:** SSHCP AMMs include NATURE TRAIL-1 (Nature Trail Plan), NATURE TRAIL-2 (Nature Trail Protection of Duripan), NATURE TRAIL-3 (Nature Trail Location), NATURE TRAIL-4 (Biological Studies Prior to Nature Trail Design), and NATURE TRAIL-5 (Monitoring of Nature Trail Impacts).
- **Condition 6. Avoid and Minimize Impacts When Re-Establishing or Establishing Wetlands:** SSHCP AMMs include RE-ESTABLISHMENT/ESTABLISHMENT-1 (Vernal Pool), RE-ESTABLISHMENT/ESTABLISHMENT-2 (Vernal Pool Inocula Bank), and RE-ESTABLISHMENT/ESTABLISHMENT-3 (Re-establishment/Establishment of Freshwater Marsh or Open Water Near Airports).
- **Condition 7. Avoid and Minimize Impacts to Streams and Creeks:** SSHCP AMMs include STREAM-1 (Laguna Creek Wildlife Corridor), STREAM-2 (UDA Stream Setbacks), STREAM-3 (Minor Tributaries to UDA Streams), STREAM-4 (Minimize Effects from Temporary Channel Re-Routing), and STREAM-5 (Design for Stream Channel Re-Routing, Widening, or Deepening).
- **Condition 8. Avoid and Minimize Impacts to Covered Species from Utility and Utility Maintenance Covered Activities:** SSHCP AMMs include UTILITY-1 (Avian Collision Avoidance), UTILITY-2 (Utility Maintenance on Preserves), UTILITY-3 (Trenchless Construction Methods), and UTILITY-4 (Siting of Entry and Exit Locations).
- **Condition 9. Avoid and Minimize Impacts That Might Result from Removing or Breaching Levees to Establish or Re-Establish Riparian Habitat:** SSHCP AMM include LEVEE-1 (Preparation of Hydraulic Analysis).
- **Condition 10. Avoid and Minimize Impacts That Might Result from Potential Residual Contamination of Preserves and Related Exposure of People to Such Hazardous Materials:** SSHCP AMMs include HAZARDOUS MATERIALS-1 (Preparation of Phase 1 Environmental Site Assessment) and HAZARDOUS MATERIALS-2 (Contingency Plan).

### Covered Species Take Avoidance and Minimization Measures

- **General Covered Species Take Avoidance and Minimization:** SSHCP AMMs include SPECIES-1 (Litter Removal Program), SPECIES-2 (No Pets in Construction Areas), SPECIES-3 (Take Reports), and SPECIES-4 (Post-Construction Compliance Report).
- **Rare Plants:** SSHCP AMMs include PLANT-1 (Rare Plant Surveys) and PLANT-2 (Rare Plant Protection).
- **Sacramento and Slender Orcutt Grass:** SSHCP AMMs include ORCUTT-1 (Orcutt Grass Surveys) and ORCUTT-2 (Orcutt Grass Protection).
- **California Tiger Salamander:** SSHCP AMMs include CTS-1 (CTS Daily Construction Schedule), CTS-2 (CTS Exclusion Fencing), CTS-3 (CTS Monitoring), CTS-4 (Avoid CTS Entrapment), CTS-5 (CTS Encounter Protocol), CTS-6 (Erosion Control Materials in CTS Habitat), and CTS-7 (Rodent Control).
- **Western Spadefoot:** SSHCP AMMs include WS-1 (WST Work Window), WS-2 (Western Spadefoot Exclusion Fencing), WS-3 (WST Monitoring), WS-4 (Avoid WST Entrapment), WS-5 (Erosion Control Materials in WST Habitat), and WS-6 (WST Encounter Protocol).
- **Giant Gartersnake:** SSHCP AMMs include GGS-1 (Giant Gartersnake Surveys), GGS-2 (Giant Gartersnake Work Window), GGS-3 (Giant Gartersnake Monitoring), GGS-4 (Giant Gartersnake Habitat Dewatering and



Exclusion), GGS-5 (Avoid Giant Gartersnake Entrapment), GGS-6 (Erosion Control Materials in Giant Gartersnake Habitat), GGS-7 (Giant Gartersnake Encounter Protocol), and GGS-8 (Giant Gartersnake Post-Construction Restoration).

- **Northwestern Pond Turtle:** SSHCP AMMs include WPT-1 (WPT Surveys), WPT-2 (WPT Work Window), WPT-3 (WPT Monitoring), WPT-4 (Northwestern Pond Turtle Habitat Dewatering and Exclusion), WPT-5 (Avoid WPT Entrapment), WPT-6 (Erosion Control Materials in WPT Habitat), WPT-7 (WPT Modeled Habitat Speed Limit), WPT-8 (WPT Pond Turtle Encounter Protocol), and WPT-9 (WPT Post-Construction Restoration).
- **Tricolored Blackbird:** SSHCP AMMs include TCB-1 (TRBL Blackbird Surveys), TCB-2 (TRBL Pre-Construction Surveys), TCB-3 (TRBL Nest Buffer), TCB-4 (TRBL Nest Buffer Monitoring), and TCB (Timing of Pesticide Use and Harvest Timing in Agricultural Preserves).
- **Swainson’s Hawk:** SSHCP AMMs include SWHA-1 (SWHA Surveys), SWHA-2 (SWHA Pre-Construction Surveys), SWHA-3 (SWHA Nest Buffer), and SWHA-4 (SWHA Nest Buffer Monitoring).
- **Greater Sandhill Crane:** SSHCP AMMs include GSC-1 (Greater Sandhill Crane Surveys), GSC-2 (Greater Sandhill Crane Pre-Construction Surveys), GSC-3 (Greater Sandhill Crane Roosting Buffer), GSC-4 (Greater Sandhill Crane Visual Barrier), and GSC-5 (Greater Sandhill Crane Roosting Buffer Monitoring).
- **Western Burrowing Owl:** SSHCP AMMs include WBO-1 (Western BUOW Surveys), WBO-2 (Western BUOW Pre-Construction Surveys), WBO-3 (Western BUOW Avoidance), WBO-4 (Western BUOW Construction Monitoring), WBO-5 (Western BUOW Passive Relocation), WBO-6 (Western BUOW Timing of Maintenance Activities), and WBO-7 (Rodent Control).
- **Covered Raptor Surveys:** SSHCP AMMs include RAPTOR-1 (Raptor Surveys), RAPTOR-2 (Raptor Pre-Construction Surveys), RAPTOR-3 (Raptor Nest/Roost Buffer), and RAPTOR-4 (Raptor Nest/Roost Buffer Monitoring).
- **Western Red Bat:** SSHCP AMMs include BAT-1 (Winter Hibernaculum Surveys), BAT-2 (Winter Hibernaculum Pre-Construction Surveys), BAT-3 (Winter Hibernaculum Buffer), and BAT-4 (Bat Eviction Methods).

## 2.1.4 SSHCP Biological Goals and Objectives

The landscape, natural community, and Covered Species biological goals and objectives from SSHCP Section 7.3 are listed in Table 1.

**Table 1. SSHCP Biological Goals and Objectives**

| SSHCP Goal                                                                                                                                   | SSHCP Objective                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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| <p><b>Goal 1.</b> Preserve and link intact landscapes that include the highest-quality habitat for Covered Species within the Plan Area.</p> | <p><b>Objective L1.</b> Establish a minimum Preserve System of 36,282 acres of natural land covers that preserves 34,495 acres and reestablishes or establishes 1,787 acres of habitat for Covered Species and other native biota as a component of the Preserve System. Of the 34,495 acres of preservation, at least 6,941 acres will be within the Urban Development Area (UDA). Of the 1,787 acres of reestablishment or establishment, at least 130 acres will be within the UDA. Preserves will be assembled in accordance with the Conservation Actions in this table.</p> <p><b>Objective L2.</b> Establish a minimum of 11 Linkage Preserves that provide interconnections between the Landscape, Core, Minor, and Satellite Preserves or existing preserves. Linkage Preserves will have a minimum width of 600 feet and will be located as described in Section 7.5 (minor variations on minimum width may be allowed where there are physical constraints in the environment, in accordance with the process outlined in Chapter 10 of the SSHCP).</p> |

**Table 1. SSHCP Biological Goals and Objectives**

| SSHCP Goal                                                                                                                                                                                     | SSHCP Objective                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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| <p><b>Goal 2.</b> Maintain or improve physical, chemical, and biological functions of aquatic resources within the Plan Area.</p>                                                              | <p><b>Objective W1.</b> Ensure that during implementation of Objective L2 (establishing minimum of 11 Linkage Preserves), the Linkage Preserves that include creeks or streams will include the creek plus a minimum 300-foot setback on each side of the creek.</p> <p><b>Objective W2.</b> Covered Activities will implement the following, as outlined in Section 5.4.2:</p> <ul style="list-style-type: none"> <li>▪ Incorporate the SSHCP design Avoidance and Minimization Measures (AMMs) (Low-Impact Development [LID] and ROAD AMMs).</li> <li>▪ Ground disturbance AMMs Best Management Practices (BMPs) and ROAD AMMs.</li> </ul> <p><b>Objective W3.</b> Covered Activities will implement stream setback requirements in the UDA for creeks and streams, as described in AMM STREAM-1, STREAM-2, and STREAM-3. Covered Activities will implement Preserve Setback requirements in the UDA as described in AMM EDGE-3.</p> <p><b>Objective W4.</b> Ensure that aquatic resources are preserved during assembly of the SSHCP Preserve System and are managed in perpetuity (see Objectives VG1, VP1, VP3, SW1, FWM1, ES1, SC1, OW1, RIP1, and RIP3).</p> <p><b>Objective W5.</b> Ensure that aquatic resources are re-established and/or established at a minimum 1:1 ratio during assembly of the SSHCP Preserve System in compliance with Conservation Actions listed in this table (see Objectives VP2, VP5, SW2, FWM2, OW2, RIP2, and RIP4).</p> <p><b>Objective W6.</b> Covered Activities will avoid a minimum of 20% of first and second order tributaries to Elder Creek, Frye Creek, Gerber Creek, Morrison Creek, Paseo Central, and Sun Creek in the UDA.</p> <p><b>Objective W7.</b> Ensure that when re-establishing/establishing vernal pools, swales, and freshwater marsh that a minimum of 50 acres of vernal pool, 30 acres of swale, and 50 acres of freshwater marsh re-establishment/establishment will occur within the Morrison Creek Watershed.</p> |
| <p><b>Goal 3.</b> Preserve, re-establish, or establish natural land covers (including Cropland and Irrigated Pasture/Grassland) that provide habitat for Covered Species.</p> <p>[Aquatic]</p> | <p><b>Objective VG1.</b> Preserve a minimum of 22,014 acres of valley grassland land cover within the vernal pool ecosystem. The Preserves will be assembled in accordance with the Conservation Actions in this table and in accordance with Section 7.5 of the SSHCP.</p> <p><b>Objective VP1a.</b> Preserve a minimum of 966 acres of vernal pool in the Plan Area.</p> <p><b>Objective VP1b.</b> Impacts to vernal Pool within or adjacent to (within 1 mile of) the Mather Core Recovery Area and Cosumnes/Rancho-Seco Recovery Area will be mitigated within or adjacent to (within 1 mile of) the Mather Core Recovery Area and/or Cosumnes/Rancho-Seco Recovery Area.</p> <p><b>Objective VP2.</b> Re-establish and/or establish a minimum of 389 acres of functional Vernal Pool, including at least 50 acres within or adjacent to (within 1 mile of) the Mather Core Recovery Area.</p> <p><b>Objective VP3.</b> Preserve a minimum of 278 acres of swale. The Preserves will be assembled in accordance with the Conservation Actions in this table and in accordance with Section 7.5 of the SSHCP.</p> <p><b>Objective VP4.</b> Preserve a minimum of 26 acres of swale or stream/creek vernal pool invertebrate habitat (VPIH) land cover type for impacts to the stream/creek (VPIH) land cover type. The Preserves will be assembled in accordance with the Conservation Actions in this table and in accordance with Section 7.5 of the SSHCP.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

**Table 1. SSHCP Biological Goals and Objectives**

| SSHCP Goal                                                  | SSHCP Objective                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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|                                                             | <p><b>Objective VP5.</b> Re-establish and/or establish a minimum of 256 acres of swale or vernal pool for impacts to the swale and stream/creek (VPIH) land covers. Re-establishment and/or establishment will occur in accordance with the Conservation Actions in this table.</p> <p><b>Objective VP6.</b> Re-establish and/or establish a minimum of 300 acres of functional vernal pool ecosystem within or adjacent to (within 1 mile of) the Mather Core Recovery Area.</p> <p><b>Objective SW1.</b> Preserve a minimum of 105 acres of seasonal wetland. The Preserves will be assembled in accordance with the Conservation Actions in this table and in accordance with Section 7.5 of the SSHCP.</p> <p><b>Objective SW2.</b> Re-establish and/or establish a minimum of 105 acres of seasonal wetland. Re-establishment and/or establishment will occur in accordance with the Conservation Actions in this table.</p> <p><b>Objective FWM1.</b> Preserve a minimum of 127 acres of Freshwater Marsh. The Preserves will be assembled in accordance with the Conservation Actions in this table and in accordance with Section 7.5 of the SSHCP.</p> <p><b>Objective FWM2.</b> Re-establish and/or establish a minimum of 127 acres of functional freshwater marsh. re-establishment and/or establishment will occur in accordance with the Conservation Actions in this table.</p> <p><b>Objective SC1.</b> Preserve a minimum of 117 acres of the stream/creek land cover. The Preserves will be assembled in accordance with the Conservation Actions in this table and in accordance with Section 7.5 of the SSHCP.</p> <p><b>Objective SC2.</b> Re-establish and/or establish a minimum of 117 acres of the stream/creek land cover. Re-establishment and/or establishment will occur in accordance with the Conservation Actions in this table.</p> <p><b>Objective OW1.</b> Preserve a minimum of 155 acres of open water (or a land cover that provides equivalent or better habitat for Covered Species affected by the loss of open water, as determined by the technical advisory committee). The Preserves will be assembled in accordance with the Conservation Actions in this table and in accordance with Section 7.5 of the SSHCP.</p> <p><b>Objective OW2.</b> Re-establish and/or establish a minimum of 155 acres of open water (or a land cover that provides equivalent or better habitat value for Covered Species affected by the loss of open water, as determined by the technical advisory committee). Re-establishment and/or establishment will occur in accordance with the Conservation Actions in this table.</p> <p><b>Objective RIP1.</b> Preserve a minimum of 964 acres of mixed riparian woodland and/or mixed riparian scrub for impacts to mixed riparian woodland, mixed riparian scrub and mine tailing riparian woodland land cover type. The Preserves will be assembled in accordance with the Conservation Actions in this table and in accordance with Section 7.5 of the SSHCP.</p> <p><b>Objective RIP2.</b> Re-establish and/or establish a minimum of 591 acres of mixed riparian woodland and/or mixed riparian scrub for impacts to mixed riparian woodland, mixed riparian scrub and mine tailing riparian woodland land cover type. re-establishment and/or establishment will occur in accordance with the Conservation Actions in this table.</p> |
| <b>Goal 3.</b> Preserve, re-establish, or establish natural | <b>Objective BOW1.</b> Preserve a minimum of 47 acres of blue oak woodland and/or blue oak savanna for direct impacts to blue oak woodland and blue oak savanna. The Preserves                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

**Table 1. SSHCP Biological Goals and Objectives**

| SSHCP Goal                                                                                                                                                                   | SSHCP Objective                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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| <p>land covers (including Cropland and Irrigated Pasture/Grassland) that provide habitat for Covered Species.</p> <p>[Terrestrial]</p>                                       | <p>will be assembled in accordance with the Conservation Actions in this table and in accordance with Section 7.5 of the SSHCP.</p> <p><b>Objective BOW2.</b> Re-establish and/or establish a minimum of 47 acres of blue oak woodland and/or blue oak savanna for direct impacts to blue oak woodland and blue oak savanna. Re-establishment and/or establishment will occur in accordance with the Conservation Actions in this table.</p> <p><b>Objective AG1.</b> Preserve a minimum of 9,696 acres of cropland and/or irrigated pasture-grassland, including 1,000 acres outside the 100-year floodplain in accordance with Objective GS6 in the SSHCP. The Preserves will be assembled in accordance with the Conservation Actions in this table and in accordance with Section 7.5 of the SSHCP.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <p><b>Goal 4.</b> Maintain or improve habitat value of natural land covers (including Cropland and Irrigated Pasture/Grassland) that are preserved within the Plan Area.</p> | <p><b>Objective HAB1.</b> Develop Preserve Management Plans (PMPs) for the benefit of Covered Species.</p> <p><b>Objective HAB2.</b> Assess whether SSHCP Preserves are being managed and maintained for the benefit of Covered Species.</p> <p><b>Objective HAB3.</b> Record management history for Preserve parcels as they are obtained. Consider management history when developing Initial PMPs.</p> <p><b>Objective HAB4.</b> Develop and implement an early detection and eradication program for invasive species within the Plan Area. The program will include regular weed assessment and mapping within the UDA, and a comprehensive weed detection and abatement plan for the Plan Area, including training of road crews to identify and report weeds.</p> <p><b>Objective HAB5.</b> Monitor Preserves for edge effects (e.g., weeds, noise, hydrology, litter).</p> <p><b>Objective HAB6.</b> Collect weather data throughout Sacramento County to assist in developing status and trends and tracking climate change and data.</p> <p><b>Objective HAB7.</b> Monitor vegetation biomass within grassland land covers.</p> <p><b>Objective AG2.</b> Of the 9,696 acres preserved under Objective AG1, maintain at least 2,000 of those acres of high-quality foraging crops (such as corn, alfalfa, or wheat) preferred by tricolored blackbird (TRBL; <i>Agelaius tricolor</i>), greater sandhill crane (<i>Grus canadensis</i>), and the Covered raptor species. The 2,000 acres will be distributed in strategic locations throughout Preserve Planning Units (PPUs) 4, 5, or 6 in plots of 20 acres or more. The Preserves will be assembled in accordance with the Conservation Actions in this table and in accordance with Section 7.5 of the SSHCP.</p> <p><b>Objective AG3.</b> Maintain or increase raptor prey availability and improve raptor foraging habitat by strategically planting 10,000 linear feet of shrub or other substrate that provides cover and refugia for fossorial mammals and other prey species.</p> <p><b>Objective RIP5.</b> Monitor groundwater table as it relates to status and trends for Riparian habitat.</p> |
| <p><b>Goal 5.</b> Maintain or expand the existing distribution of each Covered Species within the Plan Area.</p>                                                             | <p><b>Objective VPP1.</b> Protect the one currently documented unreserved occurrence of Ahart's dwarf rush in the Plan Area. Prior to take of any occurrence of Ahart's dwarf rush (<i>Juncus leiospermus</i>), protect six currently unreserved<sup>1</sup> and "biologically equivalent or superior" (as defined by the technical advisory committee) occurrences of Ahart's dwarf rush within the Plan Area. After six currently unreserved occurrences are protected, prior to take of an occurrence of Ahart's dwarf rush, protect one currently unreserved and "biologically equivalent or superior" (as defined by the technical advisory committee) occurrence of Ahart's dwarf rush within the Plan Area.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |



**Table 1. SSHCP Biological Goals and Objectives**

| SSHCP Goal                                                                                                                                               | SSHCP Objective                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
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| <p>[Plant Covered Species]</p>                                                                                                                           | <p><b>Objective VPP2.</b> Prior to take of any occurrence of Boggs Lake hedge-hyssop (<i>Gratiola heterosepala</i>), protect one currently unreserved1 and “biologically equivalent or superior” (as defined by the technical advisory committee) occurrence of Boggs Lake hedge hyssop within the Plan Area.</p> <p><b>Objective VPP3.</b> Prior to take of any occurrence of dwarf downingia (<i>Downingia pusilla</i>), protect one currently unreserved1 and “biologically equivalent or superior” (as defined by the technical advisory committee) occurrence of dwarf downingia within the Plan Area.</p> <p><b>Objective VPP4.</b> Protect and maintain in perpetuity a minimum of 15 occurrences of legenera (<i>Legenera limosa</i>) within the SSHCP Preserve System. Legenera occurrences will be preserved in accordance with the Conservation Actions described in this table. Prior to take of any occurrence of legenera, one currently unreserved and “biologically equivalent or superior” (as defined by the technical advisory committee) occurrence of legenera will be preserved and maintained within the Plan Area.</p> <p><b>Objective VPP5.</b> Prior to take of any occurrence of pincushion navarretia (<i>Navarretia myersii</i> ssp. <i>myersii</i>), protect one currently unreserved2 and “biologically equivalent or superior” (as defined by the technical advisory committee) occurrence of pincushion navarretia within the Plan Area.</p> <p><b>Objective VPP6.</b> Protect and maintain in perpetuity all known currently unprotected occurrences of Sacramento Orcutt grass (<i>Orcuttia viscida</i>) in the Plan Area to preserve existing distribution, and any currently unknown sites discovered in locations subject to an SSHCP Covered Activity.</p> <p><b>Objective VPP7.</b> Protect and maintain in perpetuity all known currently unprotected occurrences of slender Orcutt grass in the Plan Area to preserve existing distribution, and any currently unknown sites discovered in locations subject to an SSHCP Covered Activity.</p> <p><b>Objective SA1.</b> Prior to take of an occurrence of Sanford’s arrowhead (<i>Sagittaria sanfordii</i>), protect one currently unreserved3 and “biologically equivalent or superior” (as defined by the technical advisory committee) occurrence of Sanford’s arrowhead within the Plan Area.</p> <p><b>Objective SA2.</b> During re-establishment and/or establishment of seasonal wetland, freshwater marsh, open water, and stream/creek, translocate impacted Sanford’s arrowhead from other sites.</p> |
| <p><b>Goal 5.</b> Maintain or expand the existing distribution of each Covered Species within the Plan Area.</p> <p>[Aquatic Animal Covered Species]</p> | <p><b>Objective VPI1.</b> Protect and maintain in perpetuity 1,270 acres of vernal pool tadpole shrimp modeled aquatic habitat within the Plan Area to preserve existing distribution.</p> <p><b>Objective VPI2.</b> Protect and maintain in perpetuity 1,270 acres of vernal pool fairy shrimp (<i>Branchinecta lynchi</i>) modeled aquatic habitat within the Plan Area to preserve existing distribution.</p> <p><b>Objective VPI3.</b> Protect and maintain in perpetuity 1,059 acres of mid-valley fairy shrimp (<i>Branchinecta mesovallensis</i>) modeled aquatic habitat within the Plan Area to preserve existing distribution.</p> <p><b>Objective VPI4.</b> Protect and maintain in perpetuity 1,245 acres of Ricksecker’s water scavenger beetle (<i>Hydrochara rickseckeri</i>) modeled aquatic habitat within the Plan Area to preserve existing distribution.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

**Table 1. SSHCP Biological Goals and Objectives**

| SSHCP Goal | SSHCP Objective                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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|            | <p><b>Objective VPI5.</b> Ensure that during implementation of Objective VP2 of the SSHCP, re-established or established vernal pools are inoculated with soils from impacted vernal pools within 1 mile of re-establishment/establishment in accordance with the Conservation Actions in this table.</p> <p><b>Objective CTS1.</b> Preserve at least five occupied California tiger salamander (CTS) breeding ponds.</p> <p><b>Objective CTS2.</b> During assembly of the SSHCP Preserve System, ensure that modeled aquatic and upland habitat for CTS is preserved. Minimum preservation will total:</p> <ul style="list-style-type: none"> <li>▪ 141 acres of aquatic habitat, and</li> <li>▪ 1,677 acres of upland habitat.</li> </ul> <p>Ensure that mitigation for modeled high value habitat impacted within CTS designated critical habitat occurs within CTS designated critical habitat (see Objectives BOW1, VP1, SW1, and VG1).</p> <p><b>Objective CTS3.</b> Rural transportation project Covered Activities within CTS modeled habitat will be designed to allow CTS movement across the roadway area.</p> <p><b>Objective WS1.</b> During assembly of the SSHCP Preserve System, ensure that modeled aquatic and upland habitat for western spadefoot (WST; <i>Spea hammondi</i>) is preserved. Minimum preservation will total:</p> <ul style="list-style-type: none"> <li>▪ 1,531 acres of aquatic habitat, and</li> <li>▪ 22,044 acres of upland habitat.</li> </ul> <p>Ensure that mitigation for modeled high value habitat impacted within the Mather Core or Cosumnes/Rancho-Seco Core Recovery Areas occurs within the Core Recovery Areas (see Objectives BOW1, VP1, VP3, SW1, SC1, OW1, and VG1).</p> <p><b>Objective WS2.</b> During assembly of the SSHCP Preserve System, ensure that modeled aquatic habitat for WST is re-established and/or established. Minimum re-establishment and/or establishment will total 906 acres of aquatic habitat. Ensure that mitigation for modeled high value habitat impacted within the Mather Core or Cosumnes/Rancho-Seco Core Recovery Areas occurs within the Core Recovery Areas (see Objectives VP2, SW2, and OW2).</p> <p><b>Objective GGS1.</b> During assembly of the SSHCP Preserve System, ensure that modeled habitats for giant gartersnake are preserved along the following creeks (or other creeks that are determined by the technical advisory committee to provide similar giant gartersnake habitat value):</p> <ul style="list-style-type: none"> <li>▪ Lower Laguna Creek, between Twin Cities Road (State Route 104) and Meiss Road;</li> <li>▪ Skunk Creek, which flows into the Cosumnes River northwest of the City of Galt;</li> <li>▪ the short Willow Creek and tributaries of Badger Creek, which are to the north of the lower Laguna Creek and west of the Folsom South Canal; and</li> <li>▪ Badger Marsh. Mitigation for impacts to modeled habitats for giant gartersnake that occur along Badger Creek and Stone Lakes will occur along these drainages.</li> </ul> <p>Minimum preservation will total:</p> <ul style="list-style-type: none"> <li>▪ 170 acres of giant garter snake high-value aquatic habitat, and</li> <li>▪ 2,323 acres of giant gartersnake high value upland habitat.</li> </ul> <p>(See Objectives AG1, FWM1, SW1, SC1, OW1, RIP1, RIP3, and VG1.)</p> |

**Table 1. SSHCP Biological Goals and Objectives**

| SSHCP Goal                                                                                                                                                         | SSHCP Objective                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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|                                                                                                                                                                    | <p><b>Objective GGS2.</b> During assembly of the SSHCP Preserve System, ensure that modeled habitats for giant gartersnake are re-established and/or established along the following creeks (or other creeks that are determined by the technical advisory committee to provide similar habitat value):</p> <ul style="list-style-type: none"> <li>▪ Lower Laguna Creek, between Twin Cities Road (State Route 104) and Meiss Road;</li> <li>▪ Skunk Creek: this creek flows into the Cosumnes River northwest of the City of Galt;</li> <li>▪ north of Lower Laguna Creek and west of the Folsom South Canal are several small creeks—the short Willow Creek and tributaries of Badger Creek; and</li> <li>▪ Badger Marsh. Mitigation for impacts to modeled habitats for giant gartersnake that occur along Badger Creek and Stone Lakes will occur along these drainages. Minimum re-establishment and/or establishment will total:             <ul style="list-style-type: none"> <li>▪ 170 acres of high-value aquatic habitat, and</li> <li>▪ 134 acres of high-value upland habitat.</li> </ul> </li> </ul> <p>(See Objectives SW2, OW2, RIP2, and RIP4.)</p> <p><b>Objective GGS3.</b> Plan Permittees will conduct a study to establish hydrologic baseline conditions along Badger Creek to identify what level of hydrology is necessary to support giant gartersnake and acquire a water source to maintain the minimum level of hydrology during the summer months when agricultural runoff may wane.</p> <p><b>Objective WPT1.</b> During assembly of the SSHCP Preserve System, ensure that modeled aquatic and upland habitat for northwestern pond turtle (WPT; <i>Actinemys marmorata</i>) is preserved. Minimum preservation will total</p> <ul style="list-style-type: none"> <li>▪ 315.35 acres of aquatic habitat and</li> <li>▪ 10,971 acres of upland habitat.</li> </ul> <p>(See Objectives FWM1, OW1, RIP1, RIP3, VG1, BOW1, and SC1.)</p> <p><b>Objective WPT2.</b> During assembly of the SSHCP Preserve System, ensure that modeled aquatic habitat for WPT is re-established and/or established. Minimum re-establishment and/or establishment will total 315 acres of aquatic habitat.<br/>(See Objectives RIP2, FWM2, and OW2.)</p> |
| <p><b>Goal 5.</b> Maintain or expand the existing distribution of each Covered Species within the Plan Area.</p> <p>[Terrestrial Invertebrate Covered Species]</p> | <p><b>Objective VELB1.</b> Relocate or replace each impacted elderberry shrub (<i>Sambucus</i> spp.) according to USFWS <i>Conservation Guidelines for the Valley Elderberry Longhorn Beetle</i> (USFWS 1999b). Mitigation will occur in locations that are not inundated for two continuous weeks, as determined by the technical advisory committee.</p> <p><b>Objective VELB2.</b> During implementation of Riparian habitat re-establishment and/or establishment, strategically include elderberry shrub in the planting palette (see Objectives RIP2 and RIP4).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <p><b>Goal 5.</b> Maintain or expand the existing distribution of each Covered Species within the Plan Area.</p> <p>[Bird Covered Species]</p>                     | <p><b>Objective CH1.</b> During assembly of the SSHCP Preserve System, ensure that a minimum of 974 acres of modeled foraging and nesting habitat for Cooper’s hawk (<i>Accipiter cooperii</i>) is preserved in accordance with the Conservation Actions described in this table (see Objectives RIP1, RIP3, and BOW1).</p> <p><b>Objective CH2.</b> During assembly of the SSHCP Preserve System, ensure that a minimum of 601 acres of modeled foraging and nesting habitat for Cooper’s hawk is re-established and/or established (see Objectives RIP2 and RIP4).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

**Table 1. SSHCP Biological Goals and Objectives**

| SSHCP Goal | SSHCP Objective                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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|            | <p><b>Objective CH3.</b> During assembly of the SSHCP Preserve System, ensure that a minimum of 38 acres of modeled foraging habitat for Cooper’s hawk is preserved, in accordance with the Conservation Actions described in this table (see Objectives RIP1, RIP3, and BOW1)</p> <p><b>Objective FH1.</b> During assembly of the SSHCP Preserve System, ensure that a minimum of 25,881 acres of modeled foraging habitat for ferruginous hawk is preserved, including 19,625 acres in PPU5 and/or 7 (see Objectives AG1, VG1, VP1, VP3, and SW1).</p> <p><b>Objective FH2.</b> During assembly of the SSHCP Preserve System, ensure that a minimum of 729 acres of modeled foraging habitat for ferruginous hawk is re-established and/or established (see Objectives VP2 and SW2).</p> <p><b>Objective SH1.</b> During assembly of the SSHCP Preserve System, ensure that a minimum of 31,033 acres of modeled foraging habitat for Swainson’s hawk (SWHA) is preserved (see Objectives AG1, AG2, SW1, VP1, VP3, and VG1). Ensure that mitigation for high-value modeled habitat impacted within PPU4, 6, or 8 occurs within PPU4, 6, or 8.</p> <p><b>Objective SH2.</b> At least 2,000 acres of cropland habitat within high-value habitat within PPU4, 6, and 8 will be preserved in fee title to ensure that intensive management actions can be taken. Land held in fee title will be restricted to growing field or row crops. Fee title lands must maintain, at a minimum, an average of 50% of their crop cover-type in alfalfa. Other crop types or land covers may be substituted for alfalfa if the technical advisory committee determines that such other crop types or land cover types are of the same or better quality foraging habitat as alfalfa.</p> <p><b>Objective SH3.</b> During assembly of the SSHCP Preserve System, ensure a minimum of 746 acres of modeled nesting habitat for SWHA is preserved (see Objectives RIP1 and RIP3).</p> <p><b>Objective SH4.</b> During assembly of the SSHCP Preserve System, ensure that a minimum of 373 acres of modeled riparian nesting habitat for SWHA is re-established and/or established. Ensure that mitigation for modeled nesting habitat impacted within PPU4, 6, or 8 occurs within PPU4, 6, or 8 (see Objectives RIP2 and RIP4).</p> <p><b>Objective SH5.</b> For each of the 36 known nesting trees within the UDA, plant 10 trees that are modeled for SWHA nesting within SSHCP Preserves. Plant nesting trees on properties protected by the SSHCP within PPU4, 6, and 8, and near protected foraging habitat. Tree species will be selected based on known suitability as nesting habitat for SWHA, and the planted trees must be maintained and/or replaced in perpetuity.</p> <p><b>Objective SH6.</b> During assembly of the SSHCP Preserve System, ensure that a minimum of 729 acres of modeled foraging habitat for SWHA is re-established and/or established (see Objectives RIP2 and RIP4).</p> <p><b>Objective WK1.</b> During assembly of the SSHCP Preserve System, ensure that a minimum of 31,205 acres of modeled foraging habitat for white-tailed kite is preserved (see Objectives VG1, AG1, RIP1, RIP3, SW1, VP1, VP3, and BOW1).</p> <p><b>Objective WK2.</b> During assembly of the SSHCP Preserve System, ensure that a minimum of 974 acres of modeled nesting or nesting/foraging habitat for white-tailed kite is preserved (see Objectives RIP1, RIP3, and BOW1).</p> <p><b>Objective WK3.</b> During assembly of the SSHCP Preserve System, ensure a minimum of 767 acres of modeled foraging habitat for white-tailed kite is re-established and/or established (see Objectives VP2, RIP2, RIP4, and SW2).</p> |



**Table 1. SSHCP Biological Goals and Objectives**

| SSHCP Goal | SSHCP Objective                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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|            | <p><b>Objective WK4.</b> During assembly of the SSHCP Preserve System, ensure that a minimum of 601 acres of modeled nesting or nesting/foraging habitat for white-tailed kite is re-established and/or established (see Objectives RIP2 and RIP4).</p> <p><b>Objective NH1.</b> During assembly of the SSHCP Preserve System, ensure that a minimum of 1,245 acres of modeled foraging habitat for northern harrier (<i>Circus cyaneus</i>) is preserved (see Objectives VG1, AG1, VP1, VP3, FWM1, and SW1).</p> <p><b>Objective NH2.</b> During assembly of the SSHCP Preserve System, ensure that a minimum of 30,048 acres of modeled nesting/foraging habitat for northern harrier is preserved (see Objectives VG1 and AG1)</p> <p><b>Objective NH3.</b> During assembly of the SSHCP Preserve System, ensure that a minimum of 856 acres of modeled foraging habitat for northern harrier is re-established and/or established (see Objectives VP2, FWM2, and SW2).</p> <p><b>Objective BO1.</b> Preserve seven occupied western burrowing owl (BUOW; <i>Athene cunicularia</i>) sites (commensurate with 20% of the estimated number of sites within the UDA as of 2014), preserve at least 200 acres of land surrounding each occupied burrow site, and maintain modeled habitat for western BUOW within 0.4 mile of breeding sites.</p> <p><b>Objective BO2.</b> For each western BUOW or pair passively excluded, protect 200 acres of modeled habitat for western BUOW and establish a ground squirrel (<i>Spermophilus (Otospermophilus) beecheyi</i>) colony and augment with artificial burrows as appropriate (determined by the technical advisory committee). Artificial burrows will be established at appropriate locations throughout the Preserve System pursuant to CDFW (CDFG 2012 guidelines) or as otherwise determined by the technical advisory committee.</p> <p><b>Objective LS1.</b> During assembly of the SSHCP Preserve System, ensure that a minimum of 9,152 acres of modeled foraging habitat for loggerhead shrike (<i>Lanius ludovicianus</i>) is preserved (see Objectives VG1, AG1, SW1, VP1, and VP3).</p> <p><b>Objective LS2.</b> During assembly of the SSHCP Preserve System, ensure that a minimum of 22,014 acres of modeled nesting/foraging habitat for loggerhead shrike is preserved (see Objectives VG1, RIP1, and RIP3).</p> <p><b>Objective LS3.</b> During assembly of the SSHCP Preserve System, ensure that a minimum of 592 acres of modeled nesting habitat for loggerhead shrike is re-established and/or established (see Objectives RIP2 and RIP4).</p> <p><b>Objective LS4.</b> During assembly of the SSHCP Preserve System, ensure that a minimum of 965 acres of modeled nesting habitat for loggerhead shrike is preserved (see Objectives RIP2 and RIP4).</p> <p><b>Objective LS5.</b> During assembly of the SSHCP Preserve System, ensure that a minimum of 729 acres of modeled foraging habitat for loggerhead shrike is re-established and/or established (see Objective SW2).</p> <p><b>Objective GS1.</b> During assembly of the SSHCP Preserve System, ensure that a minimum of 257 acres of modeled roosting or roosting/foraging habitat for greater sandhill crane is preserved. Roosting habitat will be preserved and maintained within PPU 4, 6, and 8, with a minimum of 75% within PPU 6 (see Objectives VP1, SW1, and FWM1).</p> |

**Table 1. SSHCP Biological Goals and Objectives**

| SSHCP Goal | SSHCP Objective                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            | <p><b>Objective GS2.</b> During assembly of the SSHCP Preserve System, ensure that a minimum of 7,751 acres of modeled foraging habitat for greater sandhill crane is preserved (see Objectives AG1, AG2, and VG1).</p> <p><b>Objective GS3.</b> During assembly of the SSHCP Preserve System, ensure that a minimum of 184 acres of modeled roosting habitat or roosting/foraging habitat for greater sandhill crane is established and/or re-established. Re-establish two new roost sites (minimum of 90 acres of freshwater marsh/seasonal wetland complex each) every 2 miles in the gap between the Cosumnes population and the Stone Lakes' population or other strategic locations if that gap is closed by another habitat conservation plan or conservation project (see Objectives VP2, SW2, and FWM2).</p> <p><b>Objective GS4.</b> Create a visual screen of woody vegetation near human disturbances such as buildings, bridges, and paved roads from permanent roosting habitat within PPU 6. Screens should be located as appropriate to not interfere with habitat usage by greater sandhill crane.</p> <p><b>Objective GS5.</b> As part of the 2,000 acres preserved under Objective AG2, establish, and maintain 10 food plots in strategic locations totaling a minimum of 200 acres within an agricultural setting for greater sandhill crane foraging habitat within PPU 6. Maintain the 200 acres among the 10 food plots as irrigated pasture or planted with crops preferred by greater sandhill crane as foraging habitat. Crops may include alfalfa, corn, wheat, or rice. Strategic placement of food plots will include locations for food plots in upland areas above the floodplain.</p> <p><b>Objective GS6.</b> During assembly of the SSHCP Preserve System, ensure that a minimum of 1,000 acres of high-value modeled foraging habitat for greater sandhill crane outside the 100-year floodplain is preserved (see Objectives VP1, SW1, and FWM1).</p> <p><b>Objective TB1.</b> During assembly of the SSHCP Preserve System, ensure that a minimum of 4,149 acres of modeled foraging habitat for tricolored blackbird (TRBL) is preserved (see Objectives AG1, AG2, FWM1, VG1, VP1, VP3, FWM1, OW1, and SW1)</p> <p><b>Objective TB2.</b> During assembly of the SSHCP Preserve System, ensure that a minimum of 27,532 acres of modeled nesting/foraging habitat for TRBL is preserved, including a minimum of 402 acres of Freshwater Marsh and Seasonal Wetland (see Objectives AG1, AG2, VG1, VG1, FWM1, and SW1).</p> <p><b>Objective TB3.</b> During assembly of the SSHCP Preserve System, ensure that a minimum of 917 acres of modeled foraging habitat for TRBL is re-established and/or established (see Objectives FWM2, SW2, OW2, and VP2).</p> <p><b>Objective TB4.</b> During assembly of the SSHCP Preserve System, ensure that a minimum of 232 acres of modeled nesting/foraging habitat for TRBL is re-established and/or established (see Objectives FWM2 and SW2).</p> <p><b>Objective TB5.</b> Provide mitigation for loss of any TRBL nesting colony site that is occupied at the time of Covered Activity implementation or was recorded as an occupied nesting colony at any time since 2008. Sources for occupied nesting colonies are the California Natural Diversity Database, TRBL Portal, eBird, or other data sources approved by the Wildlife Agencies. Minimum mitigation is to protect one extant unprotected occurrence of a nesting colony prior to take of one nesting colony of TRBL. Ensure that at least five extant TRBL colonies that were occupied in recent years are maintained and managed within the SSHCP Preserve System.</p> |

**Table 1. SSHCP Biological Goals and Objectives**

| SSHCP Goal                                                                                                                                       | SSHCP Objective                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
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|                                                                                                                                                  | <p><b>Objective TB6.</b> Conduct an experimental study to identify management actions to protect TRBL colonies (e.g., coarse netting to reduce nest predation or impact of pesticides).</p> <p><b>Objective TB7.</b> Ensure that at least one large TRBL colony (i.e., one that has historically (from 1950 onward) supported a minimum of 1,500 individuals) is protected.</p> <p><b>Objective TB8.</b> For any TRBL nesting colony that is removed by a Covered Activity, re-establish and/or establish three new colonies within SSHCP Preserves. Re-established and/or established colonies can be in aquatic (freshwater marsh, seasonal wetland) or upland (annual grassland) habitat types and must be within 0.5 mile of appropriate agricultural forage crops (especially alfalfa) or annual grasslands that provide adequate foraging opportunities.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <p><b>Goal 5.</b> Maintain or expand the existing distribution of each Covered Species within the Plan Area.</p> <p>[Mammal Covered Species]</p> | <p><b>Objective AB1.</b> During assembly of the SSHCP Preserve System, ensure that a minimum of 23,171 acres of modeled habitat for American badger (<i>Taxidea taxus</i>) is preserved (see Objectives BOW1, VG1, VP1, VP3, and SW1).</p> <p><b>Objective AB2.</b> During Preserve Assembly, ensure that a minimum of 767 acres of modeled habitat for American badger is re-established and/or established (see Objectives VP2 and SW2).</p> <p><b>Objective WR1.</b> During Preserve Assembly, ensure that a minimum of 23,910 acres of modeled foraging habitat for western red bat (<i>Lasiurus blossevillii</i>) is preserved (see Objectives BOW1, RIP1, RIP3, AG1, VG1, VP1, VP3, SW1, OW1, FWM1, and SC1).</p> <p><b>Objective WR2.</b> During assembly of the SSHCP Preserve System, ensure that a minimum of 841 acres of modeled roosting/foraging habitat for western red bat is preserved (see Objectives BOW1, RIP1, and RIP3).</p> <p><b>Objective WR3.</b> During assembly of the SSHCP Preserve System, ensure that a minimum of 1,317 acres of modeled foraging habitat for western red bat is re-established and/or established (see Objectives VP2, SW2, OW2, FWM2, RIP2, and RIP4).</p> <p><b>Objective WR4.</b> During assembly of the SSHCP Preserve System, ensure that a minimum of 450 acres of modeled roosting/foraging habitat for western red bat is re-established and/or established (see Objectives RIP2 and RIP4).</p> |

**Source:** SSHCP (County of Sacramento et al. 2018)

**Notes:** SSHCP= South Sacramento Habitat Conservation Plan.

Text directly from the SSHCP; refer to the SSHCP for references to other documents, SSHCP sections, or terms used in the SSHCP.

## 2.1.5 SSHCP Preserve System

As described in SSHCP Section 7.4, the SSHCP Preserve System will total 36,282 acres and is divided into 8 Preserve Planning Units (PPUs) with different targets for preservation. SSHCP preserves are categorized based on their size, shape, land cover types, and locations as either landscape preserve, core preserve, minor preserve, satellite preserve, linkage preserve, wildlife movement corridor, or cropland preserve. SSHCP Preserves will be created through a hardline process (for Preserves where the exact preserve boundaries were known during plan preparation) and a criteria-based process. Nine hardline Preserves, totaling approximately 1,800 acres and all located in the UDA, were identified in the SSHCP. Criteria-based Preserves, located both within and outside the UDA, will be established through SSHCP implementation. These criteria-based Preserves are not mapped in the

SSHCP, but the SSHCP does conceptually describe potential targets for acquisition in each PPU in Sections 7.5.1 and 7.5.2. The SSHCP Preserve System will be built around and connect to a network of existing Preserves (totaling approximately 64,535 acres in the Plan Area); however, the existing Preserves are not part of the SSHCP Preserve System and do not contribute towards meeting the SSHCP obligations. See Exhibit 2 for the map of Existing Preserves and SSHCP Planned Hardline Preserves (SSHCP Figure 7-2) relative to the Project solar development area.

## 2.2 SSHCP Implementation

The South Sacramento Conservation Agency (SSCA) is a Joint Powers Authority that serves as the implementing entity of the SSHCP, and it is responsible for overseeing implementation, including acquisition of land or easements to develop the Preserve System, implementing habitat restoration, managing, and monitoring lands in the Preserve System, and ensuring compliance with the SSHCP. Key aspects associated with SSHCP implementation are summarized below including preserve assembly and monitoring, management, and reporting.

### 2.2.1 Preserve Assembly

SSHCP Section 9.4 describes the preserve acquisition process for assembling the SSHCP Preserve System. The SSCA acquires properties by fee title or conservation easement from willing sellers only to achieve the plan's biological goals and objectives. Third-party project proponents implementing covered activities pay development fees that fund the SSHCP program, including preserve acquisition. Project proponents may also dedicate preserve lands in-lieu of paying the acquisition portion of the development fees provided that such dedication lands are approved by the SSCA and meet defined criteria, including contributing to the plan's biological goals and objectives. The SSCA may also purchase credits from established conservation or mitigation banks located within the Plan Area.

### 2.2.2 Monitoring, Management, and Reporting

SSHCP Section 8 describes the SSHCP monitoring and management programs, which includes a program for monitoring plan compliance and AMM implementation and a program for Preserve System monitoring and management. The plan permittees and SSCA are responsible for implementing these programs over the SSHCP permit term and, in the case of preserve monitoring and management, in perpetuity. The SSCA conducts resource and Covered Species-specific monitoring within the Preserve System to track conservation strategy effectiveness and progress towards achieving biological goals and objectives. The SSCA develops individual Preserve Management Plans (PMPs) for each preserve within the SSHCP Preserve System to describe the routine management, monitoring activities, and data analysis.

The SSCA prepares annual reports to document SSHCP implementation, compliance, and effectiveness. The First Annual Report covering the period of October 2019 through September 2020 was released December 2021 (SSCA 2021). This annual report addressed covered activities receiving take coverage under the plan during the reporting period and Preserve System acquisitions prior to, during, and after the reporting period.



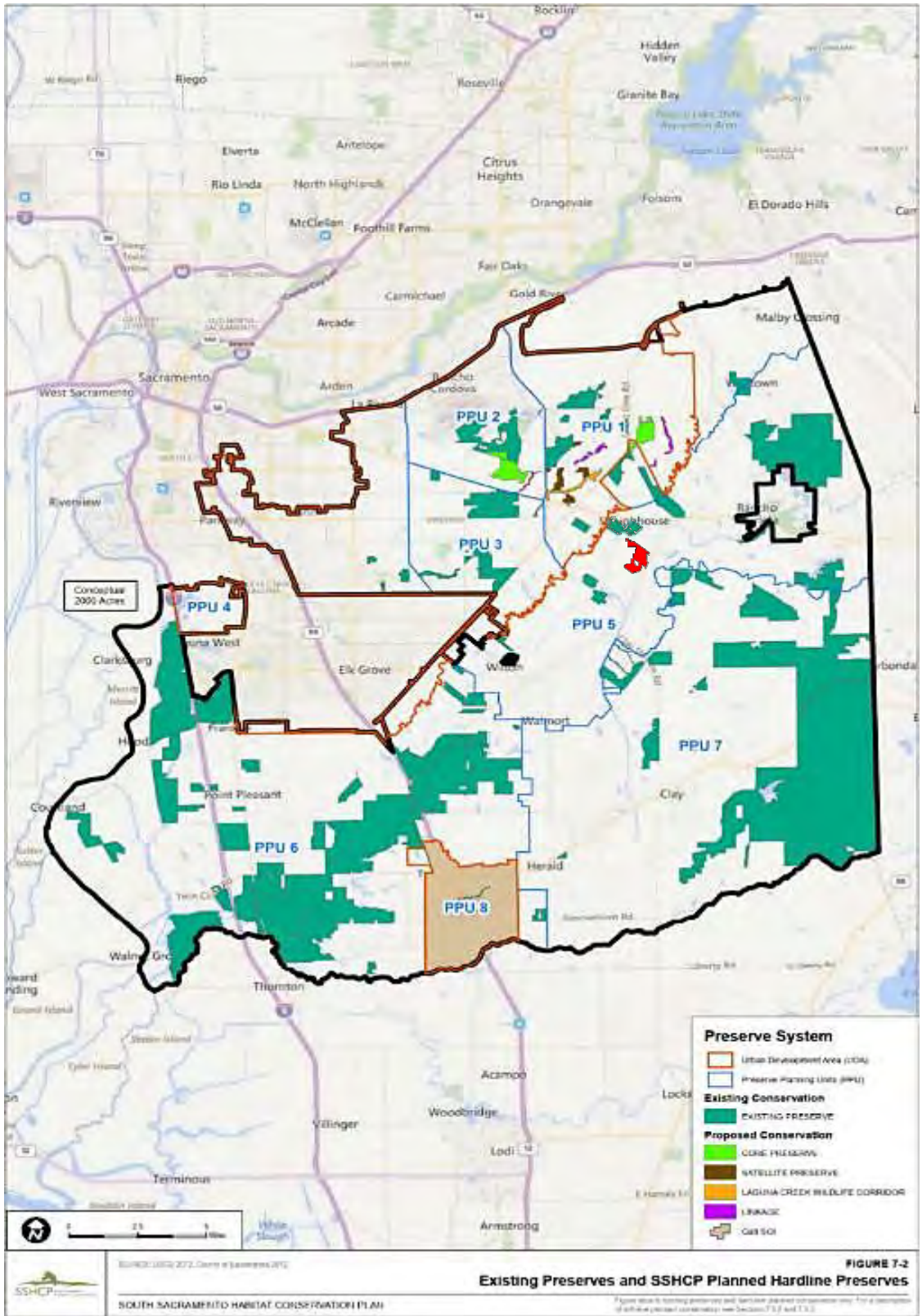


Exhibit 2. SSHCP Preserve System Map (County of Sacramento et al. 2018) with Project Solar Development Area (shown in red).

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# 3 Analysis of Project Consistency with the SSHCP

The following provides an analysis of consistency of the Project's Alternative Site Plan with the SSCHP. Section 3.1 summarizes the proposed biological conservation approach for the Project in terms of avoidance and minimization, impacts, and mitigation for those impacts. Section 3.2 provides an evaluation of Project consistency with relevant SSHCP elements.

## 3.1 Project Biological Conservation Approach

The following summary of the Project biological conservation approach proposed is based on information provided in the Sloughhouse Solar Project Final BTR (Dudek July 2022). The Project is in the process of obtaining California Environmental Quality Act (CEQA) approval through the County and obtaining all other regulatory permits necessary for construction and operation, and the Project Final BTR is part of the documentation developed to support those approvals. Through the CEQA certification and permitting processes, the County and regulatory agencies may identify mitigation measures and permit conditions that supersede or supplement the Final BTR measures currently proposed and used in this consistency analysis at this time, and if so, those additional measures or conditions would be anticipated to strengthen the biological resource avoidance, minimization, and mitigation beyond that considered in this analysis.

### 3.1.1 Avoidance and Minimization

The Project Final BTR provides comprehensive analysis of the biological resources in the PSA and recommends a set of AMMs for resources that occur or have the potential to occur. Additionally, as noted above, the County and regulatory agencies may require additional conditions of approval or permit conditions that provide additional resource avoidance and minimization.

The Project site design was developed in consideration of the existing biological resources and features. Figure 2 (Project Site) from the Sloughhouse Solar Project Final BTR shows the solar development areas and adjacent other lands within the PSA. Of the 732.26-acre PSA, approximately 371.72 acres are within the solar development area and approximately 360.54 acres are adjacent other lands. The Project has produced an environmentally preferred alternative site plan, specifically designed to focus development to the east of the site, adjacent to existing solar facilities and placement of solar facilities within areas of lowest habitat value. This Project design is concentrated to the east to avoid and minimize impacts to higher habitat values associated with aquatic features that support sensitive biological resources, including along the Cosumnes River corridor. Relevant changes incorporated into this final environmental preferred alternative site plan includes reciting the solar array placement and access roads to avoid biological and aquatic resources, specifically vernal pool and seasonal wetlands that have the potential to support special-status species. The development of the environmental preferred alternative Project design was an extensive process to reduce the Project footprint to the minimum necessary that would support the Project objectives and minimize impacts to aquatic features mapped on site.

Site preparation will be planned and designed to minimize the amount of earth movement required for the Project to the extent feasible. The hydrology design will be given priority to protect the Project's facilities and adjacent

facilities from large storm events. It is the intent of the Project to support the panels on driven piles. Additional compaction of the soil to support the building and traffic loads as well as the PV module supports may be required and is dependent on final Project engineering design. The on-site drainage patterns will be maintained to the greatest extent possible. However, it may be necessary to remove, relocate and/or fill in portions of the land for the Project.

At full build-out, most of the solar development area within the PSA will be disturbed by construction of the Project. Temporary construction lay down, construction trailers, and parking areas will be provided within the solar development area. Due to the size of the Project site, the solar field lay down areas may be relocated periodically within the solar field acreage as the Project is built out in phases.

The Project may also include additional auxiliary facilities such as raw water/fire water storage, treated water storage, storm water retention basins, water filtration buildings and equipment, and equipment control buildings, septic system(s), and parking. The design and construction of the buildings, solar arrays (panels, etc.), energy storage facilities, and auxiliary facilities will be consistent with County building standards.

Section 3.2.1 below provides an evaluation of the consistency of the Project AMMs relative to the SSHCP AMMs.

### 3.1.2 Impacts

The following provides a summary of the potential impacts to special-status species and species habitats based on the Project Final BTR.

- **Special-Status Plant Species:** No special-status plant species were observed during protocol-level botanical field surveys. Eight special-status plant species have a moderate potential to occur within the PSA and could be impacted absent AMMs. These species include Boggs Lake hedge-hyssop, dwarf downingia, hoary navarretia, legenere, pincushion navarretia, Sacramento Orcutt grass, slender Orcutt grass, and valley brodiaea.
- **Sensitive Natural Communities:** No CDFW sensitive natural communities were identified within the solar development area and no impacts would occur. Vernal pool habitat is present within the solar development area (see aquatic resources below).
- **Aquatic Resources:** Permanent impacts to waters of the United States and waters of the State under USACE, RWCB, and CDFW jurisdiction in the solar development area is 0.08 acre. Temporary impacts to waters of the United States and waters of the State under USACE, RWCB, and CDFW jurisdiction in the solar development area is 3.17 acres. Indirect impacts to waters of the United States and waters of the State under USACE, RWCB, and CDFW jurisdiction in the solar development is 2.59.
- **Designated Critical Habitat Essential Fish Habitat** No U.S. Fish and Wildlife Service (USFWS) designated critical habitat, or National Oceanic and Atmospheric Administration essential fish habitat was identified within the solar development area and no impacts would occur.
- **Special-Status Wildlife Species:** Seven special-status wildlife species have known occurrences within the solar development area of the PSA and could be impacted absent AMMs: bald eagle, BUOW, SWHA, TRBL, white-tailed kite, great egret, great blue heron, yellow-billed magpie, VELB, California linderiella, and vernal pool tadpole shrimp. Other special-status wildlife species with a moderate or high potential to occur based on potential suitable habitat in the solar development area of the PSA include WPT, WST, American badger, Ricksecker's water scavenger beetle, mid-valley fairy shrimp, native bats, and other nesting raptors and



migratory birds. Although not detected during protocol surveys and considered to have a low potential to occur in the solar development area of the PSA, AMMs have also been included for CTS and vernal pool fairy shrimp.

- **Protected Tree Species:** 15 individual trees, two of which are dead, are located within the solar development area and may be directly impacted by Project activities. No trees will require a Sacramento County Tree Removal Permit, as none of the trees fall within the Sacramento County Tree Preservation Ordinance requirements.

AMMs have been incorporated into the Project to avoid and minimize these impacts and this is evaluated in Section 3.2.1. Unavoidable impacts requiring compensatory mitigation is described in Section 3.1.3 and consistency of this mitigation is part of the evaluation provided in Section 3.2.

The SSHCP included an inventory of undeveloped potential habitat for SSHCP Covered Species, based on habitat models and not based on site-specific surveys, in the SSHCP Plan Area and in each PPU; the Project is in PPU 5. That inventory is excerpted below and compared with the acres of land cover proposed within only the solar development area for the Project (Table 2).

**Table 2. South Sacramento Habitat Conservation Plan Modeled Special-Status Wildlife Species Habitat and Land Cover within Undeveloped Lands in Plan Area and the Solar Development Area**

| Habitat Model Land Cover Types                                 | Total Modeled Habitat Potentially Available in SSHCP Plan Area <sup>1</sup> (acres) | Total Modeled Habitat Potentially Available in SSHCP Preserve Planning Unit 5 (acres) | Total Modeled Habitat with the Solar Development Area of the Project (acres) |
|----------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| <b>Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp</b> |                                                                                     |                                                                                       |                                                                              |
| Valley Grassland <sup>2</sup>                                  | 97,349                                                                              | 13,028                                                                                | 293.75                                                                       |
| Vernal Pool                                                    | 4,536                                                                               | 339                                                                                   | 3.31                                                                         |
| Swale                                                          | 1,252                                                                               | 89                                                                                    | 1.80                                                                         |
| Streams/Creeks (VPIH)                                          | 73                                                                                  | 0.4                                                                                   | 0                                                                            |
| <b>Valley Elderberry Longhorn Beetle</b>                       |                                                                                     |                                                                                       |                                                                              |
| Mine Tailing Riparian Woodland                                 | 641                                                                                 | 59                                                                                    | 0                                                                            |
| Mixed Riparian Woodland                                        | 5,785                                                                               | 1,169                                                                                 | 0                                                                            |
| Mixed Riparian Scrub                                           | 1,451                                                                               | 173                                                                                   | 0                                                                            |
| <b>California Tiger Salamander – Upland Habitat</b>            |                                                                                     |                                                                                       |                                                                              |
| Blue Oak Savanna                                               | 3,322                                                                               | 242                                                                                   | 0                                                                            |
| Blue Oak Woodland                                              | 3,774                                                                               | 992                                                                                   | 0                                                                            |
| Valley Grassland <sup>2</sup>                                  | 78,274                                                                              | 13,897                                                                                | 353.23                                                                       |
| <b>California Tiger Salamander – Aquatic Habitat</b>           |                                                                                     |                                                                                       |                                                                              |
| Vernal Pool                                                    | 3,033                                                                               | 277                                                                                   | 3.31                                                                         |
| Seasonal Wetland                                               | 1,391                                                                               | 355                                                                                   | 0                                                                            |
| <b>Northwestern Spadefoot – Upland Habitat</b>                 |                                                                                     |                                                                                       |                                                                              |
| Blue Oak Savanna                                               | 5,637                                                                               | 692                                                                                   | 0                                                                            |
| Blue Oak Woodland                                              | 9,132                                                                               | 5,864                                                                                 | 0                                                                            |

**Table 2. South Sacramento Habitat Conservation Plan Modeled Special-Status Wildlife Species Habitat and Land Cover within Undeveloped Lands in Plan Area and the Solar Development Area**

| Habitat Model Land Cover Types                          | Total Modeled Habitat Potentially Available in SSHCP Plan Area <sup>1</sup> (acres) | Total Modeled Habitat Potentially Available in SSHCP Preserve Planning Unit 5 (acres) | Total Modeled Habitat with the Solar Development Area of the Project (acres) |
|---------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| Valley Grassland <sup>2</sup>                           | 135,094                                                                             | 27,463                                                                                | 353.23                                                                       |
| <b>Northwestern Spadefoot – Aquatic Habitat</b>         |                                                                                     |                                                                                       |                                                                              |
| Vernal Pool                                             | 4,536                                                                               | 339                                                                                   | 3.31                                                                         |
| Swale                                                   | 1,252                                                                               | 89                                                                                    | 1.80                                                                         |
| Seasonal Wetland                                        | 2,600                                                                               | 446                                                                                   | 0                                                                            |
| Open Water                                              | 2,344                                                                               | 365                                                                                   | 0                                                                            |
| Streams/Creeks                                          | 2,674                                                                               | 481                                                                                   | 0                                                                            |
| Streams/Creeks (VPIH)                                   | 73                                                                                  | 0.4                                                                                   | 0                                                                            |
| <b>Northwestern Pond Turtle – Upland Habitat</b>        |                                                                                     |                                                                                       |                                                                              |
| Blue Oak Woodland                                       | 7,610                                                                               | 4,983                                                                                 | 0                                                                            |
| Blue Oak Savanna                                        | 4,825                                                                               | 519                                                                                   | 0                                                                            |
| Valley Grassland <sup>2</sup>                           | 91,580                                                                              | 22,373                                                                                | 46.48                                                                        |
| Mine Tailing Riparian Woodland                          | 306                                                                                 | 59                                                                                    | 0                                                                            |
| Mixed Riparian Woodland                                 | 5,347                                                                               | 1,152                                                                                 | 0                                                                            |
| Mixed Riparian Scrub                                    | 1,178                                                                               | 170                                                                                   | 0                                                                            |
| <b>Northwestern Pond Turtle – Aquatic Habitat</b>       |                                                                                     |                                                                                       |                                                                              |
| Freshwater Marsh                                        | 2,240                                                                               | 122                                                                                   | 0                                                                            |
| Open Water                                              | 1,441                                                                               | 205                                                                                   | 0                                                                            |
| Stream/Creeks                                           | 2,674                                                                               | 480                                                                                   | 0                                                                            |
| <b>Swainson’s Hawk – Nesting Habitat</b>                |                                                                                     |                                                                                       |                                                                              |
| Mixed Riparian Woodland                                 | 5,785                                                                               | 1,169                                                                                 | 0                                                                            |
| Mixed Riparian Scrub                                    | 1,449                                                                               | 173                                                                                   | 0                                                                            |
| <b>Swainson’s Hawk – Foraging Habitat</b>               |                                                                                     |                                                                                       |                                                                              |
| Valley Grassland <sup>2</sup>                           | 133,705                                                                             | 26,503                                                                                | 353.23                                                                       |
| Cropland                                                | 47,905                                                                              | 2,549                                                                                 | 5.91                                                                         |
| Irrigated Pasture-Grassland                             | 15,991                                                                              | 2,203                                                                                 | 0                                                                            |
| Vernal Pool                                             | 4,536                                                                               | 339                                                                                   | 3.31                                                                         |
| Seasonal Wetland                                        | 2,600                                                                               | 446                                                                                   | 0                                                                            |
| Swale                                                   | 1,252                                                                               | 89                                                                                    | 1.80                                                                         |
| <b>Western Burrowing Owl – Nesting/Foraging Habitat</b> |                                                                                     |                                                                                       |                                                                              |
| Valley Grassland <sup>2</sup>                           | 135,112                                                                             | 27,463                                                                                | 353.23                                                                       |
| Blue Oak Savanna                                        | 5,637                                                                               | 692                                                                                   | 0                                                                            |
| Cropland                                                | 47,905                                                                              | 2,549                                                                                 | 5.91                                                                         |
| Irrigated Pasture-Grassland                             | 15,991                                                                              | 2,203                                                                                 | 0                                                                            |

**Table 2. South Sacramento Habitat Conservation Plan Modeled Special-Status Wildlife Species Habitat and Land Cover within Undeveloped Lands in Plan Area and the Solar Development Area**

| Habitat Model Land Cover Types                         | Total Modeled Habitat Potentially Available in SSHCP Plan Area <sup>1</sup> (acres) | Total Modeled Habitat Potentially Available in SSHCP Preserve Planning Unit 5 (acres) | Total Modeled Habitat with the Solar Development Area of the Project (acres) |
|--------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| <b>Western Burrowing Owl – Foraging Habitat</b>        |                                                                                     |                                                                                       |                                                                              |
| Vernal Pool                                            | 4,536                                                                               | 339                                                                                   | 3.31                                                                         |
| Swale                                                  | 1,252                                                                               | 89                                                                                    | 1.80                                                                         |
| Seasonal Wetland                                       | 2,600                                                                               | 446                                                                                   | 0                                                                            |
| Stream/Creek (VPIH)                                    | 73                                                                                  | 0.4                                                                                   | 0                                                                            |
| <b>Tricolored Blackbird – Nesting/Foraging Habitat</b> |                                                                                     |                                                                                       |                                                                              |
| Valley Grassland <sup>2</sup>                          | 135,112                                                                             | 27,463                                                                                | 353.23                                                                       |
| Cropland                                               | 47,905                                                                              | 2,549                                                                                 | 5.91                                                                         |
| Seasonal Wetland                                       | 2,600                                                                               | 446                                                                                   | 0                                                                            |
| Freshwater Marsh                                       | 2,922                                                                               | 159                                                                                   | 0                                                                            |
| <b>Tricolored Blackbird – Foraging Habitat</b>         |                                                                                     |                                                                                       |                                                                              |
| Irrigated Pasture-Grassland                            | 15,991                                                                              | 2,203                                                                                 | 0                                                                            |
| Vernal Pool                                            | 4,536                                                                               | 339                                                                                   | 3.31                                                                         |
| Swale                                                  | 1,222                                                                               | 89                                                                                    | 1.80                                                                         |
| Open Water                                             | 2,344                                                                               | 365                                                                                   | 0                                                                            |

**Source:** Sacramento County 2018.

**Notes:** SSHCP = South Sacramento Habitat Conservation Plan. For this table, the aquatic resource acreages are based on the total of SSHCP modeled landcover and differs from the final acreages defined by the aquatic resource delineation conducted for the Project. VPIH= Vernal Pool Invertebrate Habitat.

- Includes total modeled habitat in the entire SSHCP Plan Area, including all potential take/impact areas and all Preserve Planning Units
- Valley Grassland is synonymous with California Annual Grassland. No SSHCP Valley Grassland landcover was modeled within the solar development area of the Project Study Area (PSA), however, approximately 357.61 acres of SSHCP California Annual Grassland landcover, a similar vegetation community, was mapped within the solar development area of the PSA.

### 3.1.3 Compensatory Mitigation

The Project will provide compensatory mitigation for impacts to aquatic resources and specific special-status species, including species that are SSHCP Covered Species, through a combination of onsite habitat preservation (within the adjacent other lands of the PSA, which are outside the solar development area), purchase of credits from existing in-lieu fee program or conservation/mitigation banks, and offsite habitat acquisition and preservation that meet the criteria established during the CEQA and regulatory permitting process. Any onsite habitat preservation or offsite acquisition and preservation lands used for compensatory mitigation would require legal protections (e.g., conservation easement, restrictive covenant, or other approved mechanism), funding for long-term habitat management and monitoring, and preparation of a PMP that describes the preserved biological resources, responsible parties, management goals and objectives, management and monitoring activities, and reporting requirements. Funding for onsite preservation lands or lands acquired and preserved offsite will be

estimated through preparation of a property analysis record (PAR) or PAR-equivalent analysis that is an itemized costs estimate of the initial and capital period costs and annual, ongoing costs.

Unavoidable impacts to aquatic resources and large, listed Branchiopod (i.e., Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp) habitat will likely be compensated through onsite habitat preservation and/or mitigation/preservation credit purchase from existing banks. The Project site is within the service area for the following existing in-lieu fee programs or banks: Sacramento District California In-Lieu Fee Program, Clay Station Mitigation Bank, Bryte Ranch Conservation Bank, Laguna Creek Mitigation Bank, and Van Vleck Ranch Mitigation Bank. Compensatory mitigation for upland species habitats will likely be compensated through onsite preservation, preservation credit purchase from existing banks, and/or offsite acquisition and preservation of lands from willing sellers. Potential offsite compensatory mitigation lands are shown on Figure 3 relative to the location of the Project.

## 3.2 Project Consistency with Relevant SSHCP Elements

The following evaluates consistency of the Project Alternative Site Plan with relevant SSHCP AMMs (Section 3.2.1) and biological goals and objectives (Section 3.2.2), assesses the relationship of the Project to SSHCP preserve assembly (Section 3.2.3), and assesses the relationship of the Project to SSHCP Take and Conservation (Section 3.2.4).

### 3.2.1 Consistency with Avoidance and Minimization Measures

The Project is not a covered activity under the SSHCP and will not receive take coverage under the SSHCP; therefore, the Project is not required to implement or comply with the SSHCP AMMs. Although the SSHCP AMMs are not applicable to the Project, the Project has incorporated relevant AMMs consistent with the SSHCP, as described below.

#### General Avoidance and Minimization Measures

SSHCP General AMMs (SSHCP Section 5.4.1 and as summarized above in Section 2.1.3) considered not relevant to this Project due to the type of project and location of the Project include the following: LID-2 (Groundwater Recharge), EDGE-2 (Single-Loaded Streets), EDGE-3a (Setback Recreational Trails), EDGE-3b (Setback Firebreaks), EDGE-3c (Setback Shade Trees and Landscaping), EDGE-4 (Locate Stormwater Control Outside Preserves), EDGE-5 (Stormwater Control in Preserve Setbacks), EDGE-6 (Detention Basins in Linkage Preserves), EDGE-9 (Livestock Access to Preserves), ROAD-1 (Road Project Location), ROAD-2 (Wildlife Crossing Structures), and Road-3 (Roadside Pesticide Use), NATURE TRAIL-1 (Nature Trail Plan), NATURE TRAIL-2 (Nature Trail Protection of Duripan), NATURE TRAIL-3 (Nature Trail Location), NATURE TRAIL-4 (Biological Studies Prior to Nature Trail Design), and NATURE TRAIL-5 (Monitoring of Nature Trail Impacts), RE-ESTABLISHMENT/ESTABLISHMENT-1 (Vernal Pool), RE-ESTABLISHMENT/ESTABLISHMENT-2 (Vernal Pool Inocula Bank), and RE-ESTABLISHMENT/ESTABLISHMENT-3 (Re-establishment/Establishment of Freshwater Marsh or Open Water Near Airports), STREAM-1 (Laguna Creek Wildlife Corridor), STREAM-2 (UDA Stream Setbacks), STREAM-3 (Minor Tributaries to UDA Streams), STREAM-4 (Minimize Effects from Temporary Channel Re-Routing), STREAM-5 (Design for Stream Channel Re-Routing, Widening, or Deepening), UTILITY-2 (Utility Maintenance on Preserves), UTILITY-3 (Trenchless Construction Methods), UTILITY-4 (Siting of Entry and Exit Locations), LEVEE-1 (Preparation of Hydraulic Analysis), HAZARDOUS MATERIALS-1 (Preparation of Phase 1 Environmental Site Assessment) and HAZARDOUS MATERIALS-2 (Contingency Plan).



SSHCP General AMMs related to stormwater quality, site design, and indirect effects that could be considered relevant to the Project include: LID-1 (Stormwater Quality), LID-3 (Natural Site Features), EDGE-1 (Compatible Land Uses), EDGE-3 (Preserve Setbacks), EDGE-7 (Hardpan/Duripan Protection), EDGE-8 (Outdoor Lighting), EDGE-10 (Prevent Invasive Species Spread), BMP-1 (Construction Fencing), BMP-2 (Erosion Control), BMP-3 (Equipment Storage and Fueling), BMP-4 (Erodible Materials), BMP-5 (Dust Control), BMP-6 (Construction Lighting), BMP-7 (Biological Monitor), BMP-8 (Training of Construction Staff), BMP-9 (Soil Compaction), BMP-10 (Revegetation), and BMP-11 (Speed Limit).

In consideration of LID-3, the site design for the solar development area in the PSA avoids natural site features to retain natural hydrologic patterns and habitat that might be used by SSHCP Covered Species. In consideration of EDGE-1 and EDGE-3, the site design of the solar development area in the PSA includes a buffer from the Cosumnes River of greater than 1,000 feet, which provides an adequate buffer of the solar development area from biological resources in the river corridor and existing Preserves north of the PSA north of the river. LID-1 and the BMP AMMs will be addressed appropriately through conditions of approval from the County under the CEQA process and permit conditions in the permits currently being sought for impacts to wetland waters and non-wetland waters from USACE, CDFW, and RWQCB. In consideration of UTILITY-1, the gen-tie line associated with the Project will be in conformance with Avian Powerline Interaction Committee standards and further specifications will be subject to permit conditions from the regulatory agencies.

### Resource-Specific Avoidance and Minimization Measures

SSHCP Section 5.4.2 (and summarized above in Section 2.1.3) specifies the Covered Species take AMMs.

SSHCP resource-specific AMMs considered not relevant to this Project due to the lack of impacts to the specific resource by the Project or due to being specific to the SSHCP include the following: SPECIES-3 (Take Reports), SPECIES-4 (Post-Construction Compliance Report), ORCUTT-2 (Orcutt Grass Protection), GGS-1 (Giant Gartersnake Surveys), GGS-2 (Giant Gartersnake Work Window), GGS-3 (Giant Gartersnake Monitoring), GGS-4 (Giant Gartersnake Habitat Dewatering and Exclusion), GGS-5 (Avoid Giant Gartersnake Entrapment), GGS-6 (Erosion Control Materials in Giant Gartersnake Habitat), GGS-7 (Giant Gartersnake Encounter Protocol), GGS-8 (Giant Gartersnake Post-Construction Restoration), GSC-1 (Greater Sandhill Crane Surveys), GSC-2 (Greater Sandhill Crane Pre-Construction Surveys), GSC-3 (Greater Sandhill Crane Roosting Buffer), GSC-4 (Greater Sandhill Crane Visual Barrier), and GSC-5 (Greater Sandhill Crane Roosting Buffer Monitoring).

Table 3. provides a summary of the consistency of proposed AMMs in the Project Final BTR with relevant resource-specific SSHCP AMMs.

**Table 3. Consistency of Project AMMs with Relevant Resource-Specific SSHCP AMMs**

| Biological Resource                        | Status of Resource in the Project Study Area (PSA) <sup>1</sup>                                                                                                                                                                                                                                                                                                                                                                                                              | Relevant Resource-Specific SSHCP AMMs <sup>2</sup>                                                                                                                                                                                          | Consistency of Project Measures with Relevant SSHCP AMM <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General Species Avoidance and Minimization | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | SPECIES-1 (Litter Removal Program) and SPECIES-2 (No Pets in Construction Areas)                                                                                                                                                            | Sloughhouse Solar Project (Project) measures/conditions consistent with the intent of the SSHCP avoidance and minimization measures (AMMs). The Project will not allow litter or pets on the Project site and will not promote residential or other development that will encourage litter or pets. Project conditions will include standard measures to address.                                                                                                                                                                                                                                                                                                                                                                                                  |
| Special-Status Plant Species               | Dudek conducted protocol-level botanical surveys in May 2021 within the solar development area. No special-status plant species were observed in the solar development area during the protocol-level surveys conducted.                                                                                                                                                                                                                                                     | PLANT-1 (Rare Plant Surveys), PLANT-2 (Rare Plant Protection), and ORCUTT-1 (Orcutt Grass Surveys)                                                                                                                                          | Project measures/conditions consistent with the intent of the SSHCP AMMs. The Final Biological Technical Report (BTR) Section 6.2 a.1 recommends the following:<br><br>A Worker Environmental Awareness Program (WEAP) and protocol-level botanical surveys prior to Project initiation. If special-status plant species are observed, the individuals will be mapped and flagged in the solar development area, Project activities will be modified to avoid impact, and fencing/signage will be installed around the avoided plant populations. A Botanical Mitigation Plan will be prepared and implemented to achieve no net loss of the species. If no net loss is not achieved by the mitigation plan, additional compensatory mitigation would be required. |
| California Tiger Salamander                | During the database and literature evaluation, the nearest California Tiger Salamander (CTS) occurrences was determined to be approximately 5 miles from the solar development area, beyond the dispersal distance known for the species. Evaluation of potential aquatic habitat within the vicinity of the solar development area identified some features that could potentially provide aquatic habitat for the species, but they were generally toward the edges of the | CTS-1 (CTS Daily Construction Schedule), CTS-2 (CTS Exclusion Fencing), CTS-3 (CTS Monitoring), CTS-4 (Avoid CTS Entrapment), CTS-5 (CTS Encounter Protocol), CTS-6 (Erosion Control Materials in CTS Habitat), and CTS-7 (Rodent Control). | Project measures/conditions consistent with the intent of the SSHCP AMMs. Final BTR Section 6.2 a.2 recommends that ground-disturbing activities within CTS suitable habitat will occur outside of the breeding and dispersal season (after July 31 and before October 15), to the extent feasible. If Project activities must be implemented during the breeding and dispersal season, they will not start until 30 minutes after sunrise and must be completed 30 minutes prior to sunset. Pre-construction survey and monitoring in CTS habitat. If a CTS is encountered during Project activities, the approved biologist will notify California Department of Fish and Wildlife (CDFW) and U.S. Fish and Wildlife Service (USFWS) immediately.                |

**Table 3. Consistency of Project AMMs with Relevant Resource-Specific SSHCP AMMs**

| Biological Resource | Status of Resource in the Project Study Area (PSA) <sup>1</sup>                                                                                                                                                                                                                                                                  | Relevant Resource-Specific SSHCP AMMs <sup>2</sup>                                                                                                                                            | Consistency of Project Measures with Relevant SSHCP AMM <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                     | dispersal distance or blocked by partial or complete barriers to movement. During the aquatic larval surveys, no CTS or their larvae were observed within the solar development area, and a low number of burrows suitable for CTS were identified within the upland areas of the solar development area.                        |                                                                                                                                                                                               | Project activities will cease within a 100-foot radius of the animal until the animal is relocated by an approved biologist with appropriate handling permits. Prior to relocation, the approved biologist will notify CDFW and USFWS to determine the appropriate procedures related to relocation. If the animal is handled, a report will be submitted within one business day to CDFW and USFWS. The Project will prepare a CTS Relocation Plan for Project activities occurring in CTS suitable habitat. The CTS Relocation Plan will achieve no net reduction in CTS or CTS suitable habitat within the PSA.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Western Spadefoot   | There is suitable habitat for western spadefoot (WST) within the solar development area. During database and literature evaluation, WST were identified within 5 miles of the PSA. During CTS aquatic larval surveys and wet season large listed branchiopod surveys, WST were not identified within the solar development area. | WS-1 (WST Work Window), WS-2 (WST Exclusion Fencing), WS-3 (WST Monitoring), WS-4 (Avoid WST Entrapment), WS-5 (Erosion Control Materials in WST Habitat), and WS-6 (WST Encounter Protocol). | Project measures/conditions consistent with the intent of the SSHCP AMMs. Final BTR Section 6.2 a.3 recommends that Project ground-disturbing activities within WST suitable habitat will occur outside the breeding and dispersal season (after May 15 and before October 15), to the extent feasible. The Project should also enlist biologists with valid collecting permits to perform a pre-construction survey for WST within suitable habitat, including breeding habitat. If WST are encountered during the survey, individuals will be safely relocated to suitable habitat outside of the solar development area. WST should be hand-captured and relocated outside the construction area to suitable habitat by a biologist with a valid collecting permit or with proper agency authorization as determined during coordination with CDFW. If Project ground-disturbing activities must commence in suitable WST habitat during the breeding and dispersal season, exclusion fencing will be installed around the Project footprint and must be monitored by an approved biologist following rain events. At the end of each working day, open trenches and holes must be covered or installed with wildlife ramps to avoid wildlife entrapment overnight. If WST are determined to be present within the solar development area, then ongoing monitoring by |

**Table 3. Consistency of Project AMMs with Relevant Resource-Specific SSHCP AMMs**

| Biological Resource      | Status of Resource in the Project Study Area (PSA) <sup>1</sup>                                                                                                                                                                                                                                                                  | Relevant Resource-Specific SSHCP AMMs <sup>2</sup>                                                                                                                                                                                                                                                                  | Consistency of Project Measures with Relevant SSHCP AMM <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          |                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                     | a qualified biologist is required to ensure there are no impacts to this species and its habitat during construction and operation and maintenance activities for the Project. This species should be included in the WEAP described above for Special-Status Plant Species and should also educate staff on the presence of special-status wildlife species and ways to avoid and minimize impacts.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Northwestern Pond Turtle | Northwestern pond turtle (WPT) has a moderate potential to occur in upland habitat within the solar development area. The Cosumnes River in the northern portion of the PSA provides aquatic habitat for WPT. Although no WPT have been documented in the solar development area, this species is known to occur within 5 miles. | WPT-1 (WPT Surveys), WPT-2 (WPT Work Window), WPT-3 (WPT Monitoring), WPT-4 (WPT Habitat Dewatering and Exclusion), WPT-5 (Avoid WPT Entrapment), WPT-6 (Erosion Control Materials in WPT), WPT-7 (WPT Modeled Habitat Speed Limit), WPT-8 (WPT Encounter Protocol), and WPT-9 (WPT Post-Construction Restoration). | Project measures/conditions consistent with the intent of the SSHCP AMMs. Final BTR Section 6.2 a.5 recommends that Project ground-disturbing activities will be conducted outside of WPTs active season (after May 1 and before September 15), to the extent feasible. If Project activities must be implemented during the breeding and dispersal season, they will not start until 30 minutes after sunrise and must be completed 30 minutes prior to sunset. A qualified biologist should conduct a pre-construction survey for WPT within 48 hours prior to the start of construction activities within 300 feet of suitable habitat (e.g., any adjacent riparian woodland). If turtles and/or nests are encountered during the pre-construction survey, a qualified biologist should be present during grubbing and clearing activities in suitable habitat (aquatic) to monitor for WPT. If a turtle is observed in the active construction zone, construction should cease within a 100-foot buffer, and a qualified biologist will be notified. Construction may resume when the biologist has either hand-captured and relocated the turtle to nearby suitable habitat outside the construction zone, or, after thorough inspection, determined that the turtle has moved away from the construction zone. On-site personnel will observe a 20-mile-per-hour speed limit within WPT suitable habitat. This species should be included in the WEAP described above for Special-Status Plant Species that will also educate staff on the |



**Table 3. Consistency of Project AMMs with Relevant Resource-Specific SSHCP AMMs**

| Biological Resource  | Status of Resource in the Project Study Area (PSA) <sup>1</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Relevant Resource-Specific SSHCP AMMs <sup>2</sup>                                                                                                                                                            | Consistency of Project Measures with Relevant SSHCP AMM <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tricolored Blackbird | There is suitable habitat for foraging for tricolored blackbird (TRBL) within the solar development area. Nesting habitat is generally absent from the solar development area; however, potential nesting habitat is present just outside the solar development area within the western PSA near the Cosumnes River. There are several known occurrences of TRBL within 5 miles of the PSA and record known occurrences within the PSA in the adjacent other lands. Dudek conducted focused TRBL surveys within the PSA from February through May 2021. A total of six TRBL species observations, including foraging, were observed during the four survey passes conducted in 2021. No nesting colonies were observed. | TCB-1 (TRBL Surveys), TCB-2 (TRBL Pre-Construction Surveys), TCBL-3 (TRBL Nest Buffer), TCB-4 (TRBL Nest Buffer Monitoring), and TCBL (Timing of Pesticide Use and Harvest Timing in Agricultural Preserves). | presence of special-status wildlife species and ways to avoid and minimize impacts.<br><br>Project measures/conditions consistent with the intent of the SSHCP AMMs. Final BTR Section 6.2 a.8 recommends that a qualified biologist should conduct a pre-construction survey for nesting TRBL approximately 2 days prior to vegetation or tree removal or ground-disturbing activities during the nesting season (April through August). The survey should cover the limits of construction and suitable nesting habitat within 500 feet. If any active nests are observed during surveys, a qualified biologist should establish a suitable avoidance buffer from the active nest. The buffer distance for TRBL will be 500 feet and should be determined based on factors such as topographic features, intensity and extent of the disturbance, timing relative to the nesting cycle, and anticipated ground disturbance schedule. Limits of construction to avoid active nests should be established in the field with flagging, fencing, or other appropriate barriers and should be maintained until the chicks have fledged and the nests are no longer active, as determined by the qualified biologist. If vegetation removal activities are delayed, additional nest surveys should be conducted such that no more than 7 days elapse between the survey and vegetation removal activities. It is recommended that disturbing potential nesting habitat (i.e., trimming and/or vegetation removal) be performed outside of the nesting season (September through March) to avoid impacts to nesting birds. If an active nest is identified within 500 feet of the construction zone after construction has started, work within 500 feet of the nest should be halted until the qualified biologist can provide appropriate avoidance and minimization measures to ensure that the nest is not disturbed by construction. Appropriate measures may include a no- |

**Table 3. Consistency of Project AMMs with Relevant Resource-Specific SSHCP AMMs**

| Biological Resource | Status of Resource in the Project Study Area (PSA) <sup>1</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Relevant Resource-Specific SSHCP AMMs <sup>2</sup>                                                                                  | Consistency of Project Measures with Relevant SSHCP AMM <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                     | disturbance buffer until the birds have fledged, limitations on construction activities that generate substantial vibration and/or noise, and/or full-time monitoring by a qualified biologist during construction activities conducted near the nest. This species should be included in the WEAP described above for Special-Status Plant Species that will also educate staff on the presence of special-status wildlife species and ways to avoid and minimize impacts.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Swainson's Hawk     | There is suitable habitat for foraging for Swainson's hawk (SWHA) within the solar development area. There are known occurrences of SWHA within the PSA, but nesting has not been observed. Dudek conducted protocol-level SWHA surveys within the PSA, and visual surveys up to 0.5 miles outside of the solar development area, from February through June 2021. These surveys identified multiple SWHA individuals foraging, perching, and displaying courtship behavior within and/or adjacent to the solar development area. | SWHA-1 (SHWA Surveys), SWHA-2 (SWHA Pre-Construction Surveys), SWHA-3 (SWHA Nest Buffer), and SWHA-4 (SWHA Nest Buffer Monitoring). | Project measures/conditions consistent with the intent of the SSHCP AMMs. Final BTR Section 6.2 a.7 recommends that if nesting SWHA are determined present within the solar development area or within 0.5 miles of the solar development area during construction of the Project, ongoing monitoring by a qualified biologist may be required to ensure there are no impacts to this species and its habitat. The requirement for monitoring will be determined in consultation with CDFW biologists after they are notified of the nesting SWHA. SWHA shall be included in the WEAP described above for Special-Status Plant Species that will also educate staff on the presence of special-status wildlife species and ways to avoid and minimize impacts. A SWHA Management Plan should be developed and implemented by the Project to ensure that the solar development area and adjacent suitable SWHA foraging habitat achieve a performance standard of no net loss of SWHA habitat function and value following Project completion. Compensatory mitigation shall be provided for impacts to SWHA foraging habitat by Project infrastructure to achieve a performance standard of no net loss of habitat value to SWHA. The methods and implementation measures to achieve this performance standard shall be described in a mitigation plan to be submitted to the County of Sacramento for review prior to the start of construction. |

**Table 3. Consistency of Project AMMs with Relevant Resource-Specific SSHCP AMMs**

| Biological Resource   | Status of Resource in the Project Study Area (PSA) <sup>1</sup>                                                                                                                                                                                                                                                                                                                                                     | Relevant Resource-Specific SSHCP AMMs <sup>2</sup>                                                                                                                                                                                                    | Consistency of Project Measures with Relevant SSHCP AMM <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| Western Burrowing Owl | There is suitable habitat for western burrowing owl (BUOW) in the solar development area, as well as recorded known occurrences. Protocol-level BUOW surveys were conducted from February through May 2021 within the solar development area. These surveys identified two visual detections of BUOW individuals, and several potential burrow locations based on presence of sign such as pellets, whitewash, etc. | WBO-1 (Western BUOW Surveys), WBO-2 (Western BUOW Pre-Construction Surveys), WBO-3 (BUOW Avoidance), WBO-4 (BUOW Construction Monitoring), WBO-5 (BUOW Passive Relocation), WBO-6 (BUOW Timing of Maintenance Activities, and WBO-7 (Rodent Control). | Project measures/conditions consistent with the intent of the SSHCP AMMs. Final BTR Section 6.2 a.7 recommends a qualified biologist should conduct surveys for BUOW within 30 days prior to ground-disturbing activities within suitable habitat for the species. The survey should cover the limits of ground disturbance and potentially suitable nesting habitat within 500 feet. If ground-disturbing activities are delayed, then additional surveys should be conducted such that no more than 7 days elapse between the survey and ground-disturbing activities. If BUOW is encountered during the pre-construction survey, the approved biologist should prepare a Special-Status Species Avoidance, Minimization, and Relocation Plan for special-status species occurring in the solar development area, including BUOW. The Avoidance, Minimization, and Relocation Plan shall include a performance standard of no net loss of BUOW within the PSA. If non-nesting BUOWs are observed in or adjacent to the construction footprint during the survey, construction should be postponed until the qualified biologist can fully implement a BUOW Passive Relocation and Exclusion Plan (to be prepared by the qualified biologist). The plan should be prepared in accordance with the Staff Report on BUOW Mitigation (CDFG 2012). Once owls have been successfully excluded and unoccupied burrows evacuated, construction in the area may proceed. If nesting BUOWs are observed during the survey, construction activities within 300 feet of occupied burrows should be delayed until young owls have fledged and are independent of the burrow, as determined by a qualified biologist. The qualified biologist may reduce the 300-foot buffer based on the type, timing, extent, and intensity of the construction activity and other factors such as site topography and vegetation cover between the construction activity and |

**Table 3. Consistency of Project AMMs with Relevant Resource-Specific SSHCP AMMs**

| Biological Resource                 | Status of Resource in the Project Study Area (PSA) <sup>1</sup>                                                                                                                                                                                                                                         | Relevant Resource-Specific SSHCP AMMs <sup>2</sup>                                                                                                              | Consistency of Project Measures with Relevant SSHCP AMM <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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|                                     |                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                 | the burrow. Once all young have fledged and are no longer dependent upon the nest burrow, the same burrow exclusion (i.e., environmentally sensitive area) procedure described above should be implemented prior to resuming construction activities in the area. If BUOW is determined present within the solar development area, then ongoing monitoring by a qualified biologist may be required to ensure there are no impacts to this species and its habitat during construction and operation and maintenance activities for the Project. This species should be included in the WEAP described above for Special-Status Plant Species that will also educate staff on the presence of special-status wildlife species and ways to avoid and minimize impacts. Compensatory mitigation shall be provided for impacts to BUOW nesting, wintering, and/or foraging habitat by Project infrastructure to achieve a performance standard of no net loss of habitat value to the BUOW. |
| Nesting Raptors and Migratory Birds | Potential nesting habitat for migratory bird species within the solar development area is generally limited to that for ground-nesting species. Development within the solar development area could involve removal of vegetation and isolated trees, which has the potential to support nesting birds. | RAPTOR-1 (Raptor Surveys), RAPTOR-2 (Raptor Pre-Construction Surveys), RAPTOR-3 (Raptor Nest/Roost Buffer), and RAPTOR-4 (Raptor Nest/Roost Buffer Monitoring). | Project measures/conditions consistent with the intent of the SSHCP AMMs. Final BTR Section 6.2 a.13 recommends a qualified biologist should conduct a survey for nesting birds within 1 week prior to vegetation removal or ground-disturbing activities during the nesting season within suitable habitat (i.e., February through August). The survey should cover the limits of construction and accessible suitable nesting habitat within 150 feet. If any active nests are observed during surveys, a qualified biologist should establish a suitable avoidance buffer from the active nest. The buffer distance will typically range from 50 to 300 feet and should be determined based on factors such as the species of bird, topographic features, intensity and extent of the disturbance, timing relative to the nesting cycle, and anticipated ground disturbance schedule. Limits of construction to avoid active                                                          |



**Table 3. Consistency of Project AMMs with Relevant Resource-Specific SSHCP AMMs**

| Biological Resource | Status of Resource in the Project Study Area (PSA) <sup>1</sup>                                                                                      | Relevant Resource-Specific SSHCP AMMs <sup>2</sup> | Consistency of Project Measures with Relevant SSHCP AMM <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
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|                     |                                                                                                                                                      |                                                    | <p>nests should be established in the field with flagging, fencing, or other appropriate barriers and should be maintained until the chicks have fledged and the nests are no longer active, as determined by the qualified biologist. Throughout the duration of the Project, a qualified biologist will conduct up to twice-weekly bird mortality surveys, with particular attention on areas of recent or current Project activities. Vegetation or trees planned for removal shall be removed during the period of September through January, to avoid the nesting season. Any trees that are to be removed during the nesting season, which is February through August, will be surveyed by a qualified biologist and will only be removed if no nesting migratory birds are found. If vegetation removal activities are delayed, additional nest surveys should be conducted such that no more than 7 days elapse between the survey and vegetation removal activities. If an active nest is identified in or adjacent to the construction zone after construction has started, work in the vicinity of the nest should be halted as-needed until the Project biologist can provide appropriate avoidance and minimization measures to ensure that the nest is not disturbed by construction. Appropriate measures may include a no-disturbance buffer until the nest has fledged and/or full-time monitoring by a qualified biologist during construction activities conducted near the nest. Nesting birds should be included in the WEAP described above for Special-Status Plant Species that will also educate staff on the presence of special-status wildlife species and ways to avoid and minimize impacts.</p> |
| American Badger     | American badger has not been documented within the solar development area, but there are known occurrences of American badger within 5 miles, and it | No SSHCP AMMs specific to this species.            | No SSHCP AMMs specific to this species. Final BTR Section 6.2 a.11 recommends a qualified biologist should conduct focused surveys for American badger dens within 2 weeks prior to ground-disturbing activities in undeveloped grassland.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

**Table 3. Consistency of Project AMMs with Relevant Resource-Specific SSHCP AMMs**

| Biological Resource | Status of Resource in the Project Study Area (PSA) <sup>1</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                               | Relevant Resource-Specific SSHCP AMMs <sup>2</sup>                                                                                            | Consistency of Project Measures with Relevant SSHCP AMM <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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|                     | <p>has high potential to occur in grassland habitat such as that within the solar development area. Although American badger has not been documented in the solar development area, one collapsed burrow with badger sign (i.e., claw marks along both sides of entrance) was documented in the northern portion of the solar development area. In addition, this species is known to occur in the vicinity, and suitable habitat, as well as SSHCP modeled habitat, is present (Sacramento County 2018).</p> |                                                                                                                                               | <p>The survey should cover the limits of ground disturbance and a 100-foot buffer. Any winter or natal American badger dens located during the survey should be evaluated (typically with remote cameras) to determine activity status. If American badger is identified, then prior to construction, the qualified biologist should establish a 100-foot no-disturbance buffer (e.g., mesh exclusion fencing, flagging, or similar) around any active American badger natal dens identified during the survey. If construction occurs during the non-breeding period (i.e., typically from June through February) and an active non-natal den is found in or adjacent to the construction footprint, a qualified biologist should attempt to trap or flush the individual and relocate it to suitable habitat away from construction. If no dens are observed, and/or after a trapping or flushing effort is completed, and/or after it is confirmed that a natal den is no longer active, the vacated or unoccupied den can be excavated, and construction can proceed. If American badger is determined present within the solar development area of the PSA, then ongoing monitoring by a qualified biologist may be required to ensure there are no impacts to this species and its habitat during construction and operation and maintenance activities for the Project. This species should be included in the WEAP described above for Special-Status Plant Species that will also educate staff on the presence of special-status wildlife species and ways to avoid and minimize impacts.</p> |
| Native Bats         | <p>Native bat roosting habitat in the solar development area is limited to isolated trees near seasonal ponds or other aquatic habitat that provide nearby foraging opportunities. No active bat roosts or signs of occupation, such as</p>                                                                                                                                                                                                                                                                   | <p>BAT-1 (Winter Hibernaculum Surveys),<br/>           BAT-2 (Winter Hibernaculum Pre-Construction Surveys),<br/>           BAT-3 (Winter</p> | <p>Project measures/conditions consistent with the intent of the SSHCP AMMs. Final BTR Section 6.2 a.12 recommends a qualified biologist should conduct a habitat assessment for roosting bats within the solar development area. The habitat assessment should include a visual inspection of potential roosting features (bats need not be present) and presence of</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

**Table 3. Consistency of Project AMMs with Relevant Resource-Specific SSHCP AMMs**

| Biological Resource | Status of Resource in the Project Study Area (PSA) <sup>1</sup>                 | Relevant Resource-Specific SSHCP AMMs <sup>2</sup>      | Consistency of Project Measures with Relevant SSHCP AMM <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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|                     | guano or staining, were detected during the reconnaissance-level field surveys. | Hibernaculum Buffer), and BAT-4 (Bat Eviction Methods). | guano within the solar development area, access routes, and 300 feet around these areas. The qualified biologist should survey these areas no less than 30 days prior to the start of work. Potential roosting features found during the survey should be flagged or marked. Removal of potential roost habitat identified during the assessment (described above) should be avoided during the bat maternity season (i.e., May 1 through August 15). If removal of potential roost habitat occurs outside of the maternity season, no further mitigation should be required. If a bat roosting or maternity colony cannot be completely avoided, the individuals should be safely evicted under the direction of the qualified bat biologist. If individuals cannot be safely evicted due to factors such as lack of alternative roosting sites or the young still being reliant on adults, as determined by the qualified bat biologist, ground-disturbing activities within a specified distance of the roost (specified distance to be determined by the bat biologist, based on surroundings and vulnerability of roost site, etc.) should be postponed or halted until conditions are suitable for safe eviction or the roost has vacated naturally. If native bats are determined present within the solar development area, then ongoing monitoring by a qualified biologist may be required to ensure there are no impacts to this species and its habitat during construction and operation and maintenance activities for the Project. Prior to Project initiation, a Bat and Avian Protection Plan will be prepared in coordination with CDFW and USFWS to reduce/eliminate impacts to bat and avian species. Native bats should be included in the WEAP described above for Special-Status Plant Species that will also educate staff on the presence of special-status wildlife species and ways to avoid and minimize impacts. |

**Table 3. Consistency of Project AMMs with Relevant Resource-Specific SSHCP AMMs**

| Biological Resource               | Status of Resource in the Project Study Area (PSA) <sup>1</sup>                                                                                                                                                                                                                                                                                                                                                                  | Relevant Resource-Specific SSHCP AMMs <sup>2</sup> | Consistency of Project Measures with Relevant SSHCP AMM <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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| Valley Elderberry Longhorn Beetle | Habitat suitable for valley elderberry longhorn beetle (VELB) has been identified within 165 feet of the solar development area, specifically within upland areas. The black elderberries within the 165 feet of the solar development area were surveyed in February 2021 for signs of VELB. One surveyed location of elderberry shrubs identified relict bore holes present on older branches, but none present on new growth. | No SSHCP AMMs specific to this species.            | No SSHCP AMMs specific to this species. Final BTR Section 6.2 a.9 recommends Project activities that may damage or kill an elderberry plant (e.g., trenching, paving, etc.) should be avoided to the extent feasible. If avoidance of all plants is not feasible, impacts to plants will be compensated through planting of elderberry plants in areas not subject to Project disturbance at a ratio of 1:1. All areas to be avoided during construction activities will be fenced and/or flagged as close to the Project solar development area as feasible. Temporary construction fencing and flagging shall be installed at least 165 feet outside the edge of the driplines of the elderberry plants. All activities that could occur within 165 feet of an elderberry plant will be conducted outside of the flight season of the VELB (i.e., March through July) to the maximum extent feasible. To avoid and minimize direct impacts to VELB, trimming will occur between November and February and will avoid the removal of any branches or stems that are greater than 1 inch in diameter. Mechanical weed removal within the dripline of any elderberry plant will be limited to the season when adult VELB are not active (i.e., August through February) and will avoid damage to the elderberry plant. Mechanical weed removal within the dripline of any elderberry plant will be limited to the season when adult VELB are not active (i.e., August through February) and will avoid damage to the elderberry plant. Mechanical weed removal within the dripline of any elderberry plant will be limited to the season when adult VELB are not active (i.e., August through February) and will avoid damage to the elderberry plant. |
| Large Listed Branchiopods         | During the database and literature evaluation, vernal pool fairy shrimp were identified within 5 miles of the solar development area and vernal pool tadpole                                                                                                                                                                                                                                                                     | No SSHCP AMMs specific to these species.           | No SSHCP AMMs specific to this species. Final BTR Section 6.2 a.10 recommends unless a smaller buffer is approved through formal consultation with USFWS, construction fencing shall be installed a minimum of 250 feet from the delineated wetland                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |



**Table 3. Consistency of Project AMMs with Relevant Resource-Specific SSHCP AMMs**

| Biological Resource              | Status of Resource in the Project Study Area (PSA) <sup>1</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Relevant Resource-Specific SSHCP AMMs <sup>2</sup> | Consistency of Project Measures with Relevant SSHCP AMM <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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|                                  | shrimp were identified as having known recorded occurrences within the solar development area (Sacramento County 2018). Vernal pool fairy shrimp and vernal pool tadpole shrimp were not observed in the Project during protocol-level dry season and wet season surveys, and there are no recorded occurrences of these species on the site in agency databases. Approximately 5.91 acres of low quality suitable aquatic habitat is present within the solar development area for both branchiopod species.                                                                  |                                                    | edge. All construction activities are prohibited within this buffer area. If total avoidance is achieved, no further action is required.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Jurisdictional Aquatic Resources | There are approximately 5.91 acres of aquatic resources in the solar development area. Of the total aquatic resources present within the solar development area approximately 5.85 acres meets the criteria for jurisdictional waters of the United States under Clean Water Act Section 404 regulated by U.S. Army Corps of Engineers (USACE) waters of the state under Clean Water Act Section 401 regulated by Regional Water Quality Control Board (RWQCB) and the definition of aquatic resources under California Fish and Game Code Section 1602 regulated by the CDFW. | No SSHCP AMMs specific to these resources          | No SSHCP AMMs specific to this species. Final BTR Section 6.2 c recommends that impacts to jurisdictional aquatic resources will require prior authorization from the applicable resource agencies in the form of waters and wetland permits (e.g., 404 Nationwide or Individual Permit, 401 Water Quality Certification, 1600 Lake or Streambed Alteration Agreement, and Floodplain Encroachment Permit), as well as compensatory mitigation to ensure no net loss of jurisdictional resources. Potential mitigation options include purchasing mitigation credits from an agency-approved wetlands mitigation bank, paying an agency-approved in-lieu fee, and/or developing conservations lands to compensate for permanent loss of resources. An Aquatic Resources Mitigation Plan and/or a Restoration and Revegetation Plan that includes aquatic resources will be prepared if impacts cannot be avoided. An Approved Jurisdictional Delineation from USACE for the Aquatic Resources Delineation Report must be completed prior to and/or in conjunction with permit submittals for USACE, CDFW, and RWQCB. Additional |

**Table 3. Consistency of Project AMMs with Relevant Resource-Specific SSHCP AMMs**

| Biological Resource    | Status of Resource in the Project Study Area (PSA) <sup>1</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Relevant Resource-Specific SSHCP AMMs <sup>2</sup> | Consistency of Project Measures with Relevant SSHCP AMM <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                    | mitigation for potential direct and indirect impacts to special-status species habitat will achieve a no net loss of habitat value at a mitigation ratio determined by the USFWS and CDFW for species within their respective jurisdiction. Aquatic resources should be included in the WEAP described above for Special-Status Plant Species that will also educate staff on the presence of special-status wildlife species and ways to avoid and minimize impacts.                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Protected Tree Species | Protected tree species are primarily located within the valley oak woodland/riparian corridor adjacent to the Cosumnes River in the PSA, outside of the solar development area. To the extent feasible, it is recommended that the Project avoid all impacts to tree resources, specifically the removal of trees and/or work within the dripline of each tree. 15 trees are located within the solar development area and may be directly impacted by Project activities. Two of those inventoried trees in the solar development area are native oak trees; however, they are not considered protected by Sacramento County as they are dead. No trees will require a Sacramento County Tree Removal Permit, as none of the trees fall within the Sacramento County Tree Preservation Ordinance requirements. | No SSHCP AMMs specific to these resources.         | Final BTR Section 6.2 recommends that if tree removal and/or work within the dripline cannot be avoided, then the Sacramento County Tree Preservation Ordinance requires a tree removal permit for the removal of any native oak with a single trunk measuring 6 inches or greater in diameter at break height, or a multiple-trunked tree with an aggregate diameter at breast height measuring 10 inches or greater. This ordinance also prohibits grading, trenching, or filling any area within the dripline of a native oak without being issued a permit. Potential impacts to trees must be mitigated in accordance with the Sacramento County Tree Preservation Ordinance. For trees that need removal and do not fall within Sacramento County Tree Preservation Ordinance requirements, a Landscaping Plan will be prepared and submitted prior to the start of Project activities. |

**Notes:** SSCHP= South Sacramento Habitat Conservation Plan

<sup>1</sup> Based on results documented in the Sloughhouse Solar Project Biological Technical Report (Dudek June 2022).

<sup>2</sup> South Sacramento Habitat Conservation Plan (SSHCP) Section 5.4.2

- <sup>3</sup> Based on measures from the Sloughhouse Solar Project Biological Technical Report (Dudek June 2022) and anticipated forthcoming County conditions of approval through the Project CEQA process and regulatory permit conditions. See Dudek 2022 for full text of the Project avoidance and minimization measures.

### 3.2.2 Consistency with Biological Goals and Objectives

SSHCP Section 7.3 (and listed above in Section 2.1.4, Table 1) identifies the biological goals and objectives of the plan. The SSCHP biological goals and objectives were developed for the SSHCP conservation strategy to address covered activities in the Plan Area. The Project is within the Plan Area but is not a covered activity and will not obtain take coverage for the Covered Species under the plan; therefore, the SSHCP biological goals and objectives are not applicable to the Project. Nonetheless, this analysis evaluates whether the Project would preclude achievement of the relevant SSHCP goals and objectives, and the potential contribution the Project's compensatory mitigation could provide towards supplementing the SSHCP goals and objectives.

Based on a review of the SSHCP biological goals and objectives, numerous objectives address specific resources that would not be impacted by the Project, address specific locations not applicable to the Project, and/or are specific to implementation of the SSHCP itself. Therefore, the following SSHCP objectives are not considered relevant to the Project: Objective W3 (Covered Activities in UDA will implement STREAM-1, STREAM-2, STREAM-3, and EDGE-3 AMMs), Objective W6 (Covered Activities in UDA will avoid a minimum of 20% of tributaries to Elder Creek, Frye Creek, Gerber Creek, Morrison Creek, Paseo Central, and Sun Creek), Objective W7 (Ensure minimum acreage of re-establishing/establishing within the Morrison Creek Watershed), Objective VP1b (Mitigation for Impacts to Vernal Pool within/adjacent to the Mather Core Recovery Area and Cosumnes/Rancho-Seco Recovery Area occur in same area), Objective VP2 (Re-establish and/or establish a minimum acreage of functional Vernal Pool within/adjacent to the Mather Core Recovery Area), Objective VP6 (Re-establish and/or establish a minimum acreage of functional Vernal Pool Ecosystem within/adjacent to the Mather Core Recovery Area), Objective BOW1 (Preserve a minimum acreage of Blue Oak Woodland and/or Blue Oak Savanna), Objective BOW2 (Re-establish and/or establish a minimum acreage of Blue Oak Woodland and/or Blue Oak Savanna), Objective HAB6 (Collect weather data), Objective RIP5 (Monitor groundwater table), Objective SA1 (Protect occurrence of Sanford's arrowhead), Objective VPP1 (Protect occurrence of Ahart's dwarf rush), Objective VPP2 (Protect occurrence of Boggs Lake hedge hyssop), Objective VPP3 (Protect occurrence of dwarf downingia), Objective VPP4 (Protect minimum occurrences of legenera), Objective VPP5 (Protect occurrence of pincushion navarretia), Objective VPP6 (Protect all known occurrences of Sacramento Orcutt grass), Objective VPP7 (Protect all known occurrences of slender Orcutt grass), Objective SA2 (Translocate impacted Sanford's arrowhead during re-establishment and/or establishment), Objective VPI3 (Protect minimum acreage of mid-valley fairy shrimp modeled aquatic habitat), Objective VPI4 (Protect minimum acreage of Ricksecker's water scavenger beetle modeled aquatic habitat), Objective CTS1 (Preserve minimum number of occupied CTS breeding pond), Objective CTS3 (Allow CTS movement across the covered transportation projects), Objective GGS1 (Ensure minimum acreage of modeled habitats for giant gartersnake is preserved), Objective GGS2 (Ensure minimum acreage of modeled habitats for giant gartersnake is re-established and/or established), Objective GGS3 (Plan Permittees will conduct a study to establish hydrologic baseline conditions for giant gartersnake), Objective VELB2 (Include elderberry shrub in the planting palette of Riparian habitat re-establishment and/or establishment), Objective CH1 (Ensure minimum acreage of modeled foraging and nesting habitat for Cooper's hawk is preserved), Objective CH2 (Ensure minimum acreage of modeled foraging and nesting habitat for Cooper's hawk is re-established and/or established), Objective CH3 (Ensure minimum acreage of modeled foraging habitat for Cooper's hawk is preserved), Objective SH5 (Tree planting for impacted nesting trees in the UDA), Objective BO1 (Preserve minimum number of occupied western BUOW sites and acreage within the UDA), Objective LS1 (Ensure minimum acreage of modeled foraging habitat for loggerhead shrike is preserved), Objective LS2 (Ensure minimum acreage of modeled nesting/foraging habitat for loggerhead shrike is preserved), Objective LS3 (Ensure minimum acreage of modeled nesting habitat for loggerhead shrike is re-established and/or established), Objective LS4 (Ensure minimum acreage of modeled nesting habitat for



loggerhead shrike is preserved), Objective LS5 (Ensure minimum acreage of modeled foraging habitat for loggerhead shrike is re-established and/or established), Objective GS1 (Ensure minimum acreage of modeled roosting or roosting/foraging habitat for greater sandhill crane is preserved), Objective GS2 (Ensure minimum of modeled foraging habitat for greater sandhill crane is preserved), Objective GS3 (Ensure minimum acreage of modeled roosting habitat or roosting/foraging habitat for greater sandhill crane is established and/or re-established), Objective GS4 (Create a visual screen from permanent roosting habitat within PPU 6), Objective GS5 (Establish and maintain minimum foraging habitat for greater sandhill crane), Objective GS6 (Ensure minimum acreage of high-value modeled foraging habitat for greater sandhill crane outside the 100-year floodplain is preserved), Objective TB5 (Provide mitigation for loss of any TRBL nesting colony site that is occupied at the time of Covered Activity implementation), Objective TB6 (Conduct an experimental study to identify management actions to protect TRBL colonies), Objective TB7 (Ensure minimum number of TRBL colony is protected), and Objective TB8 (For any TRBL nesting colony that is removed by a Covered Activity, re-establish and/or establish three new colonies within SSHCP Preserves).

Table 4 provides an evaluation of the Project consistency with relevant SSHCP biological goals and objectives.

**Table 4. Consistency of Project with Relevant SSHCP Biological Goals and Objectives**

| SSHCP Goal                                                                                                                                  | SSHCP Objective <sup>1</sup>                                                                                                 | Project Consistency with SSHCP Goals and Objectives <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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| <p><b>Goal 1.</b> Preserve and link intact landscapes that include the highest-quality habitat for Covered Species within the Plan Area</p> | <p>Objective L1 (Establish a minimum Preserve System) and Objective L2 (Establish a minimum number of Linkage Preserves)</p> | <p>As shown in Table 2 above, the Sloughhouse Solar Project (Project) would impact a small percentage of the land cover types and SSCHP Covered Species modeled habitat in Plan Area as a whole and in SSHCP Preserve Planning Unit 5. Additionally, as described in Section 3.1.1 above, the Project focuses development in the lowest habitat value areas of the PSA and avoids the higher habitat values areas including the Cosumnes River Corridor. The SSHCP describes the conceptual wildlife movement through PPU 5<sup>3</sup> but does not specifically map any Linkage Preserves outside the UDA. Figure 4, SSHCP Habitat Connectivity, provides a graphical representation of the described wildlife movement through PPU 5, relative to the Project, illustrating that wildlife movement through PPU 5 to other PPUs would not be prevented by the Project. Therefore, implementation of the Project would not preclude the SSHCP achieving objectives for preserve establishment in PPU 5.</p> <p>Additionally, the Project will provide compensatory mitigation for impacts to aquatic resources and specific special-status species habitats, including species that are SSHCP Covered Species, through the acquisition of credits from existing conservation/mitigation banks, onsite preservation, and/or offsite acquisition and preservation. The specific compensatory mitigation package will be developed through the County CEQA process and in compliance with the permitting requirements and standards of the state and federal regulatory agencies. As shown in Figure 3, the potential offsite compensatory mitigation lands are approximately 4 miles from the Project site, within the same PPU as the Project, and would build on existing preserve lands to buffer and provide a larger, connected preserve network. Therefore,</p> |

**Table 4. Consistency of Project with Relevant SSHCP Biological Goals and Objectives**

| SSHCP Goal                                                                                                                                                                              | SSHCP Objective <sup>1</sup>                                                                                                                                                                                                                                                                                                               | Project Consistency with SSHCP Goals and Objectives <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                            | compensatory mitigation from the Project would supplement and bolster the function of the SSHCP Preserve System and would not preclude achieving the SSHCP goals and objectives for the Preserve System.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <p><b>Goal 2.</b> Maintain or improve physical, chemical, and biological functions of aquatic resources within the Plan Area.</p>                                                       | <p>Objective W1 (Ensure Linkage Preserves include creek setback), Objective W2 (Covered Activities will implement LID, ROAD, and BMP AMMs), Objective W4 (Ensure that aquatic resources are preserved and are managed), and Objective W5 (Ensure that aquatic resources are re-established and/or established at a minimum 1:1 ratio).</p> | <p>As shown in Table 3 above, the Project would implement specific avoidance and minimization measures that are consistent with relevant SSHCP AMMs.</p> <p>Additionally, the Project will provide compensatory mitigation for impacts to aquatic resources and specific special-status species habitats, including species that are SSHCP Covered Species, through the acquisition of credits from existing conservation/mitigation banks, onsite preservation, and/or offsite acquisition and preservation. The specific compensatory mitigation package will be developed through the County CEQA process and through the permitting requirements and standards of the regulatory agencies. As shown in Figure 3, the potential offsite compensatory mitigation lands are approximately 4 miles from the Project site, within the same PPU as the Project, and would build on existing preserve lands to buffer and provide a larger, connected preserve network. Therefore, the potential compensatory mitigation lands would contribute to maintaining and improving functions in the Plan Area.</p> |
| <p><b>Goal 3.</b> Preserve, re-establish, or establish natural land covers (including Cropland and Irrigated Pasture/Grassland) that provide habitat for Covered Species. [Aquatic]</p> | <p>Objective VG1 (Preserve a minimum acreage of Valley Grassland land cover within the Vernal Pool Ecosystem), Objective VP1a (Preserve a minimum acreage of Vernal Pool in the Plan Area), Objective VP3 (Preserve a minimum acreage of Swale), Objective VP4 (Preserve a minimum acreage of</p>                                          | <p>The Project will provide compensatory mitigation for impacts to aquatic resources and specific special-status species habitats, including species that are SSHCP Covered Species, through the acquisition of credits from existing conservation/mitigation banks, onsite preservation, and/or offsite acquisition and preservation. The specific compensatory mitigation package will be</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

**Table 4. Consistency of Project with Relevant SSHCP Biological Goals and Objectives**

| SSHCP Goal                                                                                                                                                                                  | SSHCP Objective <sup>1</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Project Consistency with SSHCP Goals and Objectives <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                             | <p>Swale or stream/creek vernal pool invertebrate habitat (VPIH) land cover type)</p> <p>Objective VP5 (Re-establish and/or establish a minimum acreage of Swale or vernal pool for impacts to the Swale and Stream/Creek (VPIH) land covers), Objective SW1 (Preserve a minimum acreage of Seasonal Wetland), Objective SW2 (Re-establish and/or establish a minimum acreage of Seasonal Wetland), Objective FWM1 (Preserve a minimum acreage of Freshwater Marsh), Objective FWM2 (Re-establish and/or establish a minimum of acreage of functional Freshwater Marsh), Objective SC1 (Preserve a minimum acreage of the Stream/Creek land cover), Objective SC2 (Re-establish and/or establish a minimum acreage of the Stream/Creek land cover), Objective OW1 (Preserve a minimum acreage of Open Water), Objective OW2 (Re-establish and/or establish a minimum acreage of Open Water), Objective RIP1 (Preserve a minimum acreage of Mixed Riparian Woodland and/or Mixed Riparian Scrub), and Objective RIP2 (Re-establish and/or establish acreage of Mixed Riparian Woodland and/or Mixed Riparian Scrub)</p> | <p>developed through the County CEQA process and through the permitting requirements and standards of the regulatory agencies. Since the Project is not a covered activity and will not obtain take coverage for the Covered Species under the SSHCP, the compensatory mitigation will not contribute towards meeting the minimum acreage requirements of the SSHCP; however, the Project's compensatory mitigation, including the potential the potential offsite mitigation shown in Figure 3, would supplement and bolster the function of the SSHCP Preserve System and would not preclude achieving the SSHCP goals and objectives for the Preserve System.</p> |
| <p><b>Goal 3.</b> Preserve, re-establish, or establish natural land covers (including Cropland and Irrigated Pasture/Grassland) that provide habitat for Covered Species. [Terrestrial]</p> | <p>Objective AG1 (Preserve a minimum acreage of Cropland and/or Irrigated Pasture-Grassland)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <p>The Project will provide compensatory mitigation for impacts to aquatic resources and specific special-status species habitats, including species that are SSHCP Covered Species, through the acquisition of credits from existing conservation/mitigation banks, onsite preservation, and/or offsite acquisition and preservation. The specific compensatory mitigation package will be developed through the County CEQA process and through</p>                                                                                                                                                                                                                |



**Table 4. Consistency of Project with Relevant SSHCP Biological Goals and Objectives**

| SSHCP Goal                                                                                                                                                            | SSHCP Objective <sup>1</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Project Consistency with SSHCP Goals and Objectives <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | the permitting requirements and standards of the regulatory agencies. Since the Project is not a covered activity and will not obtain take coverage for the Covered Species under the SSHCP, the compensatory mitigation will not contribute towards meeting the minimum acreage requirements of the SSHCP; however, the Project's compensatory mitigation, including the potential the potential offsite mitigation shown in Figure 3, would supplement and bolster the function of the SSHCP Preserve System and would not preclude achieving the SSHCP goals and objectives for the Preserve System.                                                                                                                                                                                                                                                                                                                                                 |
| <b>Goal 4.</b> Maintain or improve habitat value of natural land covers (including Cropland and Irrigated Pasture/Grassland) that are preserved within the Plan Area. | Objective HAB1 (Develop Preserve Management Plans [PMPs]), Objective HAB2 (Assess whether SSHCP Preserves are being managed and maintained), Objective HAB3 (Record and consider management history for Preserve parcels when developing Initial PMP), Objective HAB4 (Develop and implement an early detection and eradication program for invasive species), Objective HAB5 (Monitor Preserves for edge effects), Objective HAB7 (Monitor biomass within Grassland land covers), Objective AG2 (Maintain minimum acreage of high-quality foraging crops), and Objective AG3 (Maintain or increase raptor prey availability) | The Project will provide compensatory mitigation for impacts to aquatic resources and specific special-status species habitats, including species that are SSHCP Covered Species, through the acquisition of credits from existing conservation/mitigation banks, onsite preservation, and/or offsite acquisition and preservation. The specific compensatory mitigation package will be developed through the County CEQA process and through the permitting requirements and standards of the regulatory agencies. To the extent existing mitigation banks are part of the Project's compensatory mitigation, these banks have existing, operating management and monitoring programs to maintain the resources over the long term. If other compensatory mitigation is used, the County and/or regulatory agencies will condition the project to ensure that sufficient long-term management and monitoring is provided for the conserved resources. |
| <b>Goal 5.</b> Maintain or expand the existing distribution of each                                                                                                   | No SSHCP Objectives relevant to the Project under this goal.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | No SSHCP Objectives relevant to the Project under this goal.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

**Table 4. Consistency of Project with Relevant SSHCP Biological Goals and Objectives**

| SSHCP Goal                                                                                                                                              | SSHCP Objective <sup>1</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Project Consistency with SSHCP Goals and Objectives <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Covered Species within the Plan Area.<br>[Plant Covered Species]                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Goal 5.</b> Maintain or expand the existing distribution of each Covered Species within the Plan Area.<br>[Aquatic Animal Covered Species]           | Objective VPI1 (Protect minimum acreage of Vernal Pool tadpole shrimp modeled aquatic habitat), Objective VPI2 (Protect minimum acreage of Vernal Pool fairy shrimp modeled aquatic habitat), Objective VPI5 (Ensure proper soil inoculation during in re-established or established vernal pools), Objective CTS2 (Ensure minimum acreage of modeled aquatic and upland habitat for California tiger salamander is preserved), Objective WS1 (Ensure minimum acreage of modeled aquatic and upland habitat for western spadefoot [WST] is preserved), Objective WS2 (Ensure minimum acreage of modeled aquatic habitat for WST is re-established and/or established), Objective WPT1 (Ensure minimum acreage of modeled aquatic and upland habitat for northwestern pond turtle [WPT] is preserved), and Objective WPT2 (Ensure minimum acreage of modeled aquatic habitat for WPT is re-established and/or established). | The Project will provide compensatory mitigation for impacts to aquatic resources and specific special-status species habitats, including species that are SSHCP Covered Species, through the acquisition of credits from existing conservation/mitigation banks, onsite preservation, and/or offsite acquisition and preservation. The specific compensatory mitigation package will be developed through the County CEQA process and through the permitting requirements and standards of the regulatory agencies. Since the Project is not a covered activity and will not obtain take coverage for the Covered Species under the SSHCP, the compensatory mitigation will not contribute towards meeting the minimum acreage requirements of the SSHCP; however, the Project's compensatory mitigation, including the potential the potential offsite mitigation shown in Figure 3, would supplement and bolster the function of the SSHCP Preserve System and would not preclude achieving the SSHCP goals and objectives for the Preserve System. |
| <b>Goal 5.</b> Maintain or expand the existing distribution of each Covered Species within the Plan Area.<br>[Terrestrial Invertebrate Covered Species] | Objective VELB1 (Relocate or replace each impacted elderberry shrubs)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | As described above in Table 3, avoidance of all elderberry shrubs is not feasible, impacts to plants will be compensated through planting of elderberry plants in areas not subject to Project disturbance at a ratio of 1:1. See the other Project avoidance and minimization measures listed in Table 3 for Valley elderberry longhorn beetle (VELB).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Goal 5.</b> Maintain or expand the existing distribution of each                                                                                     | Objective FH1 (Ensure that minimum acreage of modeled foraging habitat for ferruginous hawk is                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | The Project will provide compensatory mitigation for impacts to aquatic resources and specific special-status                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

**Table 4. Consistency of Project with Relevant SSHCP Biological Goals and Objectives**

| SSHCP Goal                                                                 | SSHCP Objective <sup>1</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Project Consistency with SSHCP Goals and Objectives <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Covered Species within the Plan Area.</p> <p>[Bird Covered Species]</p> | <p>preserved), Objective FH2 (Ensure minimum acreage of modeled foraging habitat for ferruginous hawk is re-established and/or established), Objective SH1 (Ensure minimum acreage of modeled foraging habitat for Swainson’s hawk [SWHA] is preserved), Objective SH2 (Ensure minimum acreage of cropland habitat within high-value habitat within PUs 4, 6, and 8 will be preserved) Objective SH3 (Ensure minimum acreage of modeled nesting habitat for SWHA is preserved), Objective SH4 (Ensure minimum acreage of modeled riparian nesting habitat for SWHA is re-established and/or established), Objective SH6 (Ensure minimum acreage of modeled foraging habitat for SWHA is re-established and/or established), Objective WK1 (Ensure minimum acreage of modeled foraging habitat for white-tailed kite is preserved), Objective WK2 (Ensure minimum acreage of modeled nesting or nesting/foraging habitat for white-tailed kite is preserved), Objective WK3 (Ensure minimum acreage of modeled foraging habitat for white-tailed kite is re-established and/or established), Objective WK4 (Ensure minimum acreage of modeled nesting or nesting/foraging habitat for white-tailed kite is re-established and/or established), Objective NH1 (Ensure minimum acreage of modeled foraging habitat for northern is preserved), Objective NH2 (Ensure minimum acreage of modeled nesting/foraging habitat for northern harrier is preserved), Objective NH3 Ensure minimum acreage of modeled foraging habitat for northern harrier is re-established and/or established), Objective BO2 (Protect minimum acreage of modeled habitat for</p> | <p>species habitats, including species that are SSHCP Covered Species, through the acquisition of credits from existing conservation/mitigation banks, onsite preservation, and/or offsite acquisition and preservation. The specific compensatory mitigation package will be developed through the County CEQA process and through the permitting requirements and standards of the regulatory agencies. Since the Project is not a covered activity and will not obtain take coverage for the Covered Species under the SSHCP, the compensatory mitigation will not contribute towards meeting the minimum acreage requirements of the SSHCP; however, the Project’s compensatory mitigation, including the potential the potential offsite mitigation shown in Figure 3, would supplement and bolster the function of the SSHCP Preserve System and would not preclude achieving the SSHCP goals and objectives for the Preserve System.</p> |

**Table 4. Consistency of Project with Relevant SSHCP Biological Goals and Objectives**

| SSHCP Goal                                                                                                                                       | SSHCP Objective <sup>1</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Project Consistency with SSHCP Goals and Objectives <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                  | western burrowing owl (BUOW) and establish a ground squirrel colony and augment with artificial burrows for each western BUOW or pair passively excluded), Objective TB1 (Ensure minimum acreage of modeled foraging habitat for tricolored blackbird [TRBL] is preserved), Objective TB2 Ensure minimum acreage of modeled nesting/foraging habitat for TRBL is preserved), Objective TB3 (Ensure minimum acreage of modeled foraging habitat for TRBL is re-established and/or established), Objective TB4 (Ensure minimum acreage of modeled nesting/foraging habitat for TRBL is re-established and/or established.                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <p><b>Goal 5.</b> Maintain or expand the existing distribution of each Covered Species within the Plan Area.</p> <p>[Mammal Covered Species]</p> | Objective AB1 (Ensure minimum acreage of modeled habitat for American badger is preserved), Objective AB2 (Ensure minimum acreage of modeled habitat for American badger is re-established and/or established), Objective WR1 (Ensure minimum acreage of modeled foraging habitat for western red bat is preserved), Objective WR2 (Ensure minimum acreage of modeled roosting/foraging habitat for western red bat is preserved), Objective WR3 (Ensure minimum acreage of modeled foraging habitat for western red bat is re-established and/or established), Objective WR4 (Ensure minimum acreage of modeled roosting/foraging habitat for western red bat is re-established and/or established) | The Project will provide compensatory mitigation for impacts to aquatic resources and specific special-status species habitats, including species that are SSHCP Covered Species, through the acquisition of credits from conservation/mitigation banks, onsite preservation, and/or offsite acquisition and preservation. The specific compensatory mitigation package will be developed through the County CEQA process and through the permitting requirements and standards of the regulatory agencies. Since the Project is not a covered activity and will not obtain take coverage for the Covered Species under the SSHCP, the compensatory mitigation will not contribute towards meeting the minimum acreage requirements of the SSHCP; however, the Project's compensatory mitigation, including the potential the potential offsite mitigation shown in Figure 3, would supplement and bolster the function of the SSHCP Preserve System and would not preclude achieving the SSHCP goals and objectives for the Preserve System. |



**Notes:**

- <sup>1</sup> See SSHCP Section 7.3 and Section 2.1.4 above for full text of the SSHCP objectives.
- <sup>2</sup> The SSCHP biological goals and objectives were developed for the SSHCP conservation strategy to address covered activities in the Plan Area. The Project is within the Plan Area but is not a covered activity and will not obtain take coverage for the Covered Species under the plan; therefore, the SSHCP biological goals and objectives are not applicable to the Project. Nonetheless, this analysis evaluates whether the Project would preclude achievement of the relevant SSHCP goals and objectives, and the potential contribution the Project's compensatory mitigation could provide towards supplementing the SSHCP goals and objectives.
- <sup>3</sup> The SSHCP textually describes the Linkage Preserves in PPU 5 as: "Linkage Preserve L-6 will connect the Laguna Creek Wildlife Movement Corridor Preserve from the northwest in PPU 3 to the Cosumnes River/Deer Creek Wildlife Movement Corridor Preserve in PPU 5. Linkage Preserve L-6 will be mostly Valley Grassland. Linkage Preserve L-11 will connect Cosumnes River/Deer Creek Wildlife Movement Corridor to the large Landscape Preserve in PPU 7 to the southeast. The majority of Linkage Preserve L-11 will also be Valley Grassland but may also include substantial areas of Cropland and Seasonal Wetland."

### 3.2.3 Relationship to SSHCP Preserve Assembly

SSHCP Section 9.4 (and summarized above in Section 2.2.1) describes the SSHCP preserve acquisition process. The ultimate SSHCP Preserve System totaling 36,282 acres will be assembled within the approximately 317,600-acre SSHCP Plan Area through preserve acquisitions by the South Sacramento Conservation Agency, preserve dedications by third party project proponents, and potentially through credit purchases from established conservation or mitigation banks. Existing Preserves (lands dedicated prior to SSHCP adoption) and mitigation lands dedicated for projects and activities not covered by the SSHCP do not contribute towards meeting the SSHCP obligations for the Preserve System.

As described above in Section 3.1.3, the Project will provide compensatory mitigation for impacts to aquatic resources and specific special-status species, including species that are SSHCP Covered Species, through the acquisition of credits from existing conservation/mitigation banks, onsite preservation, and/or offsite acquisition and preservation. The specific compensatory mitigation package will be developed through the County CEQA process and through permitting requirements and standards of the regulatory agencies. The Project's compensatory mitigation would supplement and bolster the function of the SSHCP Preserve System and would not preclude the plan permittees from meeting the obligations for SSHCP preserve assembly.

Use of mitigation banks to accomplish the Project's compensatory mitigation requirements would be consistent with the SSHCP, which allows conservation and mitigation banks to be used to assemble the SSHCP Preserve System. The Project site is within the service area for the following existing banks: Clay Station Mitigation Bank, Bryte Ranch Conservation Bank, Laguna Creek Mitigation Bank, and Van Vleck Ranch Mitigation Bank. Use of existing conservation/mitigation banks would likely be used to compensate for unavoidable impacts to aquatic resources and large, listed Branchiopod (i.e., Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp) habitat. Onsite preservation may also be utilized to compensate for all or a portion of these resources.

The SSHCP did not envision credit purchases as composing a substantial portion of the Preserve System, but SSHCP preparers did not want to foreclose the credit purchase option. If the Project employs existing mitigation banks to fulfill part or all its compensatory mitigation requirements, that will reduce the number of existing credits available to the South Sacramento Conservation Agency. However, based on the expected limited role of credits in the SSHCP Preserve System this would not constrain or preclude the plan permittees from meeting their SSHCP Preserve System assembly obligations. As documented in the SSHCP First Annual Report (South Sacramento Conservation Agency 2021), a total of nine Preserves have been established under the SSHCP as of December 2021, all of which have been fee title dedications or easements (i.e., no bank credit purchases). These documented SSHCP preserve acquisitions to-date total 1,691 acres, including Gill Ranch No. 1 (160 acres), Ogden Ranch (32 acres), Arista del Sol (50 acres), Gill Ranch No. 2 (209 acres), Mahon Ranch (552 acres), The Ranch (198 acres), Van Vleck 1st Acquisition (237 acres), Van Vleck 2nd Acquisition (147 acres), and Rooney 2 (106 acres). Considering that bank credit purchases have not, as of yet, been a strategy for assembling the SSHCP Preserve System, the use of mitigation/conservation banks to offset the Project impacts within the approximately 381.3-acre solar development area would not conflict with the SSHCP.

Compensatory mitigation for upland species habitats will likely be compensated through preservation credit purchase from existing banks and/or offsite acquisition and preservation of lands from willing sellers. Potential offsite compensatory mitigation lands are shown on Figure 3 relative to the location of the Project. As shown in Figure 3, the potential offsite compensatory mitigation lands are approximately 4 miles from the Project site, within the

same PPU as the Project, and would build on existing preserve lands to buffer and provide a larger, connected preserve network. Therefore, compensatory mitigation from the Project would supplement and bolster the function of the SSHCP Preserve System and would not preclude achieving the SSHCP goals and objectives for the Preserve System. If land acquisition/dedication (onsite or offsite) is employed to fulfill Project compensatory mitigation requirements, this would also be consistent with the SSHCP. The extent to which these options will be employed is not known at this time; however, the compensatory mitigation acreage required to offset the impacts within the 371.72-acre solar development area will not constrain or preclude the plan permittees from meeting SSHCP Preserve System assembly obligations. Additionally, if land acquisition/ dedication is used for the Project, it is anticipated that the County and/or regulatory agencies will apply permitting standards and requirements to ensure that sufficient long-term management and monitoring is provided for the conserved properties, consistent with that of the SSHCP preserve lands.

Construction of the Project would for the 30-year life of the Project remove the lands within the Project site from potential acquisition as preserve lands by the South Sacramento Conservation Agency. Under existing conditions, the property provides relatively uninterrupted connectivity between the Cosumnes River corridor and preserved lands to the south and east. These types of linkage areas are potentially important to the SSHCP conservation strategy. As described in Section 3.1.1 above, the Project focuses development in the lowest habitat value areas of the PSA and avoids the higher habitat values areas including the Cosumnes River Corridor, and the PSA would retain much of its connectivity value for bird species and common mammal species (e.g., coyote) that are known to currently move across these lands. The SSHCP describes the conceptual wildlife movement through PPU 5 but does not specifically map any Linkage Preserves outside the UDA. Figure 4, SSHCP Habitat Connectivity, provides a graphical representation of the described wildlife movement through PPU 5, relative to the Project, illustrating that wildlife movement through PPU 5 to other PPUs would not be prevented by the Project.

### 3.2.4 Relationship to SSHCP Take and Conservation

The SSHCP contemplates those activities that are not covered activities, and therefore are not regulated by the SSHCP, may nevertheless occur within the Plan Area of the SSHCP with the approval of the applicable state and federal environmental agencies. For example, the SSHCP acknowledges that the Sacramento County General Plan provides for land uses that are not covered activities, but that are within the Plan Area of the SSHCP. The SSHCP recognizes that land uses outside of the Plan Area that are not covered activities may be permitted through separate federal and state authorization.

The Project is required to obtain permits and other approvals from the USFWS, USACE, CDFW, and RWQCB, and will further minimize and mitigate impacts on natural resources to achieve comply with the regulatory standards of these agencies. These are the same regulatory standards applied by the USFWS and the other environmental agencies in their review and approval of the SSHCP. Therefore, the Project mitigation strategy is designed to achieve the mitigation standards applicable to covered activities under the SSHCP.

The SSHCP Covered Species take limits and conservation obligations do not apply to the Project. As demonstrated in this document, the Project incorporates AMMs to reduce impacts and will provide compensatory mitigation for unavoidable impacts through the County CEQA process and regulatory permitting processes that will provide for conservation for relevant landscape and ecological processes, land covers, and special-status species, including SSHCP Covered Species, comparable to that of the SSHCP.

---

## 4 Conclusion

The impacts to SSHCP land cover types from Project development are a very small percentage of the inventory of those lands in PPU 5 and an even smaller percentage of the modeled habitat in the SSHCP Plan Area. Mitigation for the Project includes mitigation measures that are equivalent to the relevant AMMs in the SSHCP. These AMMs, coupled with compensatory mitigation for unavoidable impacts, would ensure that Project effects on SSHCP Covered Species would be avoided, minimized, and mitigated so that the Project is consistent with the SSHCP.



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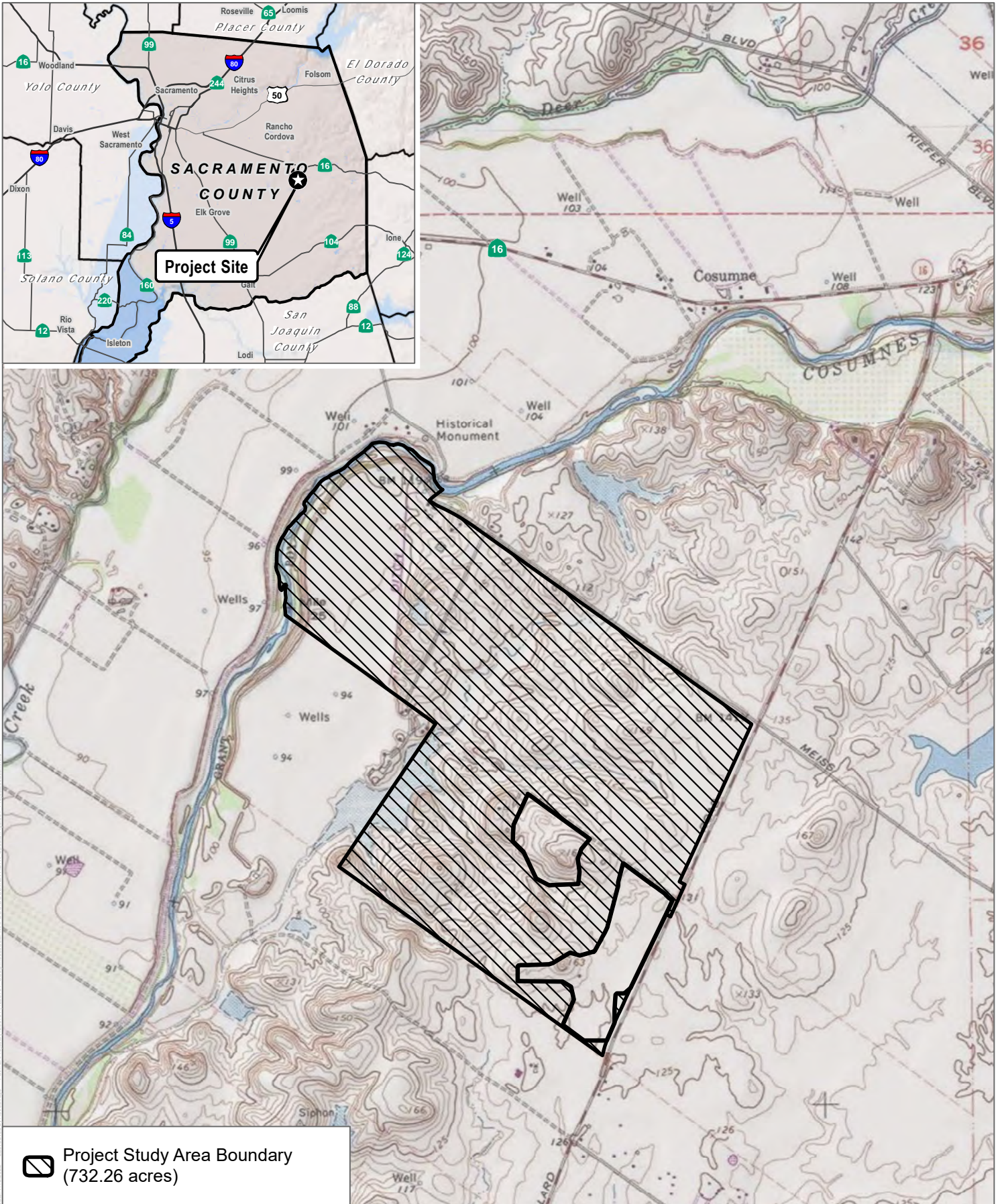
## 5 References


Dudek. 2022. *Final Biological Technical Report, Sloughouse Solar Project*. Prepared for Sloughouse Solar, LLC. July 2022.

County of Sacramento, City of Rancho Cordova, City of Galt, Sacramento County Water Agency, Sacramento Regional County Sanitation District, and the Southeast Connector Joint Powers Authority. 2018. *Final South Sacramento Habitat Conservation Plan*. January 2018. <https://planning.saccounty.net/PlansandProjectsIn-Progress/Pages/SSHCPPlan.aspx>.

South Sacramento Conservation Agency. 2021. *First Annual Report, Reporting Period: October 1, 2019 through September 30, 2020 for the South Sacramento Habitat Conservation Plan*. December 2021.

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 Project Study Area Boundary  
(732.26 acres)

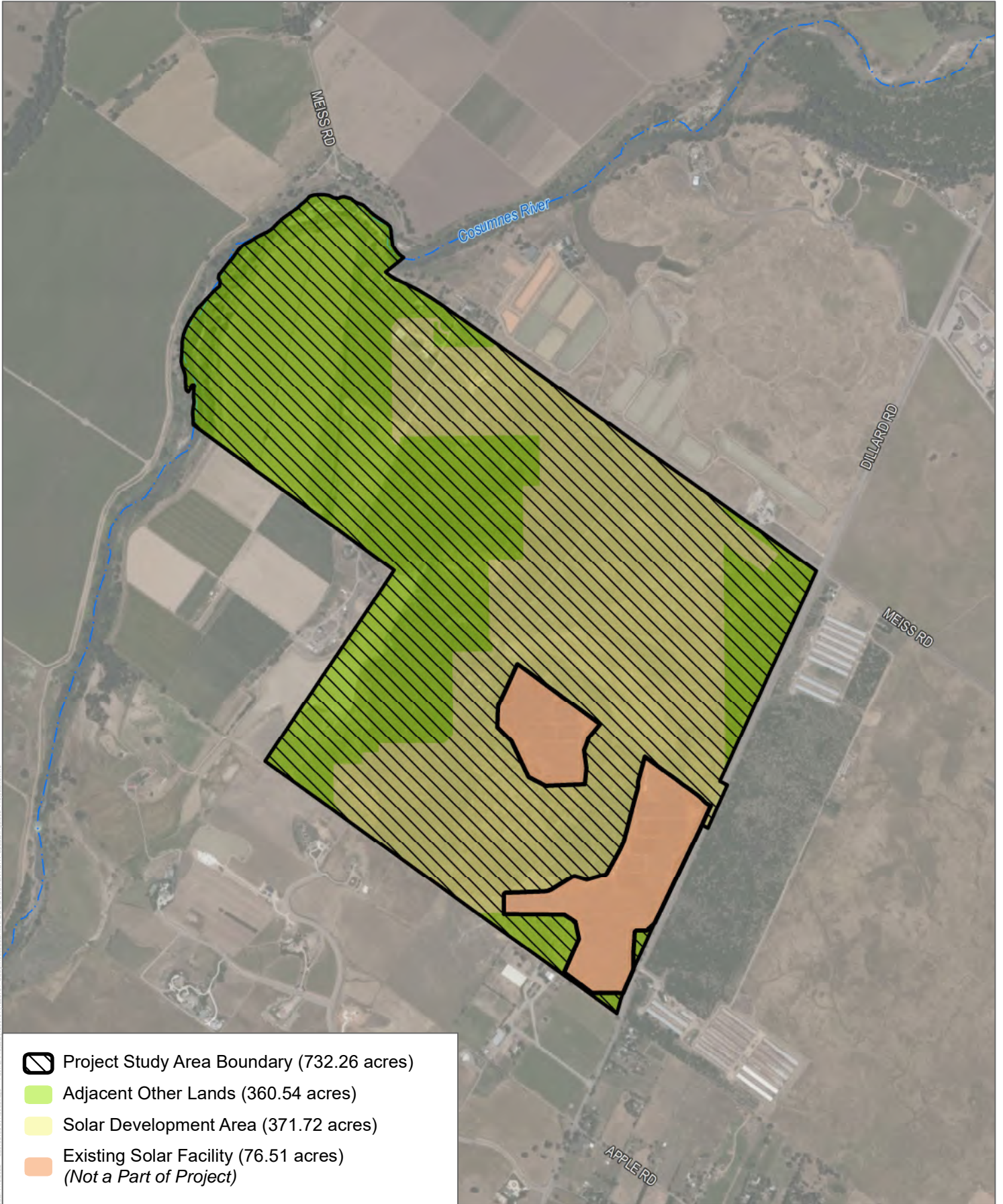
SOURCE: USGS 7.5-Minute Series Sloughouse Quadrangle, Environmentally Preferred Alternative Site Plan - DESRI (6/24/2022)

**FIGURE 1**

**Project Location**



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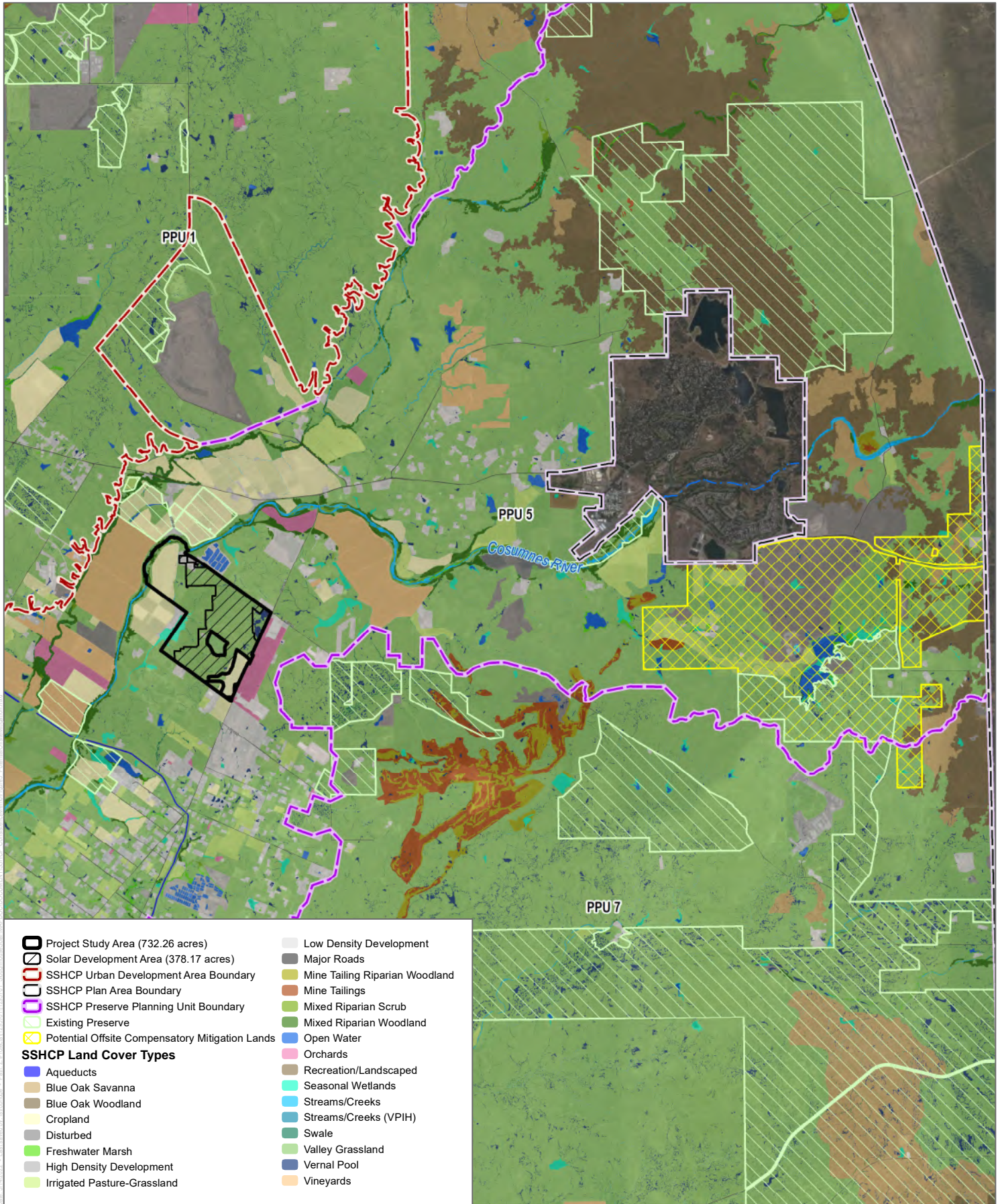
SOURCE: Bing Maps (2020), Sacramento County (2019), Environmentally Preferred Alternative Site Plan - DESRI (6/24/2022)

**FIGURE 2**

Project Site

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SOURCE: Bing Maps 2022; Sacramento County 2019

FIGURE 3

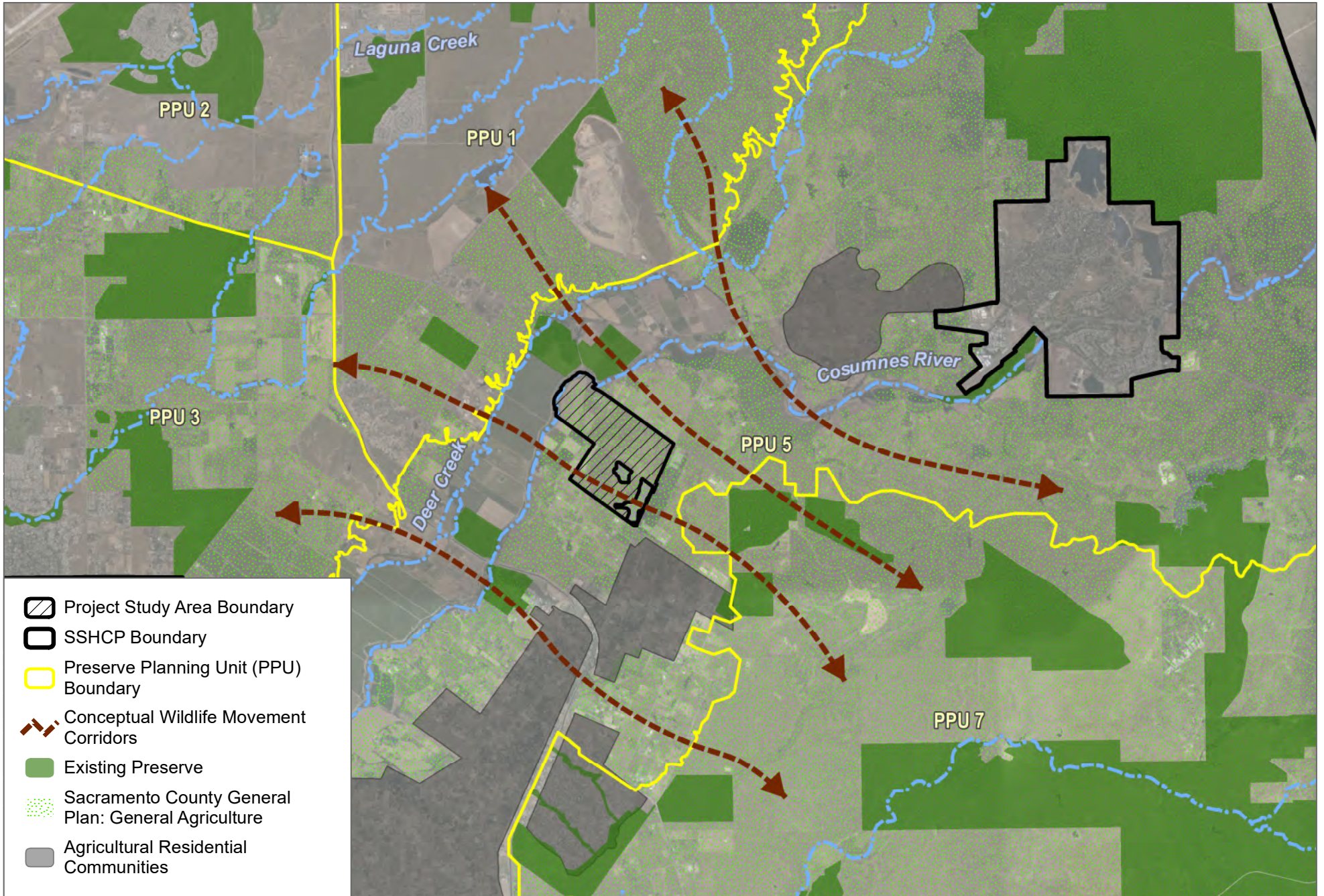
Potential Offsite Mitigation





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SOURCE: Bing Maps 2022, Sacramento County 2020, Open Street Map 2019



**FIGURE 4**

**SSHCP Habitat Connectivity**

SSHCP Consistency Analysis for the Sloughhouse Solar Project



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**D-11 Biological Opinion**





# United States Department of the Interior

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In Reply Refer to:  
2022-0062219-07-001

July 18, 2023  
*Sent Electronically*

Suzanne Kopich  
Rural Utilities Service, Rural Development  
U.S. Department of Agriculture  
Washington, D.C. 20250-0003  
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Subject: Formal Consultation on the Sloughhouse Solar Project in Sacramento County,  
California

Dear Suzanne Kopich:

This letter is in response to the U.S. Department of Agriculture Rural Utilities Service (Rural Utilities Service) November 21, 2022, request for initiation of formal consultation with the U.S. Fish and Wildlife Service (Service) on the proposed Sloughhouse Solar Project (proposed project) in Sacramento County, California. At issue are the proposed project's effects on the federally endangered vernal pool tadpole shrimp (*Lepidurus packardii*) (tadpole shrimp), and the federally threatened vernal pool fairy shrimp (*Branchinecta lynchi*) (fairy shrimp) and valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) (beetle). This response is provided under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act), and in accordance with the implementing regulations pertaining to interagency cooperation (50 CFR 402).

The federal action on which we are consulting is the Rural Utilities Services providing financial assistance to Sloughhouse Solar, LLC (project proponent) for the purpose of constructing a 50-megawatt solar photovoltaic energy-generating facility. By letter dated November 16, 2022, the U.S. Army Corps of Engineers (Corps) designated the U.S. Department of Agriculture as the lead Federal agency to act on their behalf for the purpose of compliance with section 7 of the Act. The Corps is a cooperating agency as they will issue a Clean Water Act section 404 permit for the proposed project's fill of waters of the United States.

Pursuant to 50 CFR 402.12(j), you submitted a biological assessment for our review and requested concurrence with the findings presented therein. These findings conclude that the proposed project may affect, but is not likely to adversely affect, the beetle. The findings also conclude that the proposed project may affect, and is likely to adversely affect the tadpole shrimp and the fairy shrimp.

In considering your request, we based our evaluation on the following:

- 1) Your November 21, 2022, letter requesting initiation of formal consultation;
- 2) The October 2022 *Sloughouse Solar Project Biological Assessment* (biological assessment) prepared by Dudek (consultant); and,
- 3) Other information available to the Service.

### *Valley Elderberry Longhorn Beetle*

Surveys conducted onsite by the consultant identified elderberry shrubs (*Sambucus* spp.), which are the sole host plant for the beetle, with stems greater than 1 inch in diameter. A total of 13 elderberry shrubs are present at the proposed project site. Two shrubs are within the area of proposed ground disturbance (neither of the shrubs exhibited beetle exit holes, frass, or beetle observations during surveys). A third shrub that contains relict beetle exit holes is located on the northern border of the proposed solar development area. The remaining 10 elderberry shrubs are located throughout land that is adjacent to and north of the footprint, three of which are located in a cluster in the northern riparian habitat along the Cosumnes River and were observed to contain beetle exit holes.

In addition to utilizing standard best management practices throughout the proposed project footprint for the entire construction period including erosion and sediment control, the project proponent has proposed the following conservation measures to minimize effects to the beetle:

- 1) **Avoidance and Fencing.** Project activities that may damage or kill an elderberry plant (e.g., trenching, paving, etc.) will be avoided to the extent feasible. If avoidance of all plants is not feasible, impacts to plants will be compensated through planting of elderberry plants in areas not subject to project disturbance at a ratio of 1:1. All areas to be avoided during construction activities will be fenced and/or flagged as close to the proposed solar development area as feasible. Temporary construction fencing and flagging will be installed at least 165 feet outside the edge of the driplines of the elderberry plants. Environmentally sensitive area signs will be erected along the edge of the avoidance area. In areas where encroachment on the 165-foot buffer has been approved by the Service, a minimum setback of at least 20 feet from the dripline of each elderberry plant will be provided, as well as documentation of Service setback approval. **Timing.** All activities that could occur within 165 feet of an elderberry plant will be conducted outside of the flight season of the beetle (i.e., March through July) to the maximum extent feasible.
- 2) **Trimming.** If necessary, trimming may remove or destroy beetle eggs and/or larvae and may reduce the health and vigor of the elderberry plant. Therefore, to avoid and minimize direct impacts to beetle, trimming will occur between November and February and will avoid the removal of any branches or stems that are greater than 1 inch in diameter.
- 3) **Mowing.** Mechanical weed removal within the dripline of any elderberry plant will be limited to the season when adult beetles are not active (i.e., August through February) and will avoid damage to the elderberry plant.
- 4) **Construction Monitoring.** A qualified biologist (i.e., someone with training, knowledge, and previous experience with the beetle) will monitor the proposed solar development area if work is approved to occur within the 165-foot avoidance buffer to assure that all

avoidance and minimization measures are implemented. The amount and duration of monitoring will depend on the project specifics and will be discussed with the Service.

- 5) Worker Environmental Education Program. A qualified biologist will provide training for all contractors, work crews, and any on-site personnel on the status of the beetle, its host plant and habitat, the need to avoid damaging the elderberry shrubs, and the possible penalties for not complying with these requirements.

The three elderberry shrubs that are within and border the proposed solar development area are in uplands (i.e., non-riparian areas), with the shrub closest to the river approximately 1,650 feet outside the riparian corridor, and the other two shrubs 4,200 feet and 4,300 feet outside the riparian corridor. The two shrubs proposed for removal from the project footprint are located in uplands that are greater than 2,625 feet from the nearest elderberry cluster, are isolated individuals, and did not have recorded observations of the beetle during surveys. Therefore, these two shrubs do not provide suitable habitat for the beetle. The third shrub that is within the border of the proposed project footprint will be avoided with a 165-foot buffer. The remaining 10 elderberry shrubs are located outside of the proposed project development footprint and will be avoided and undisturbed with temporary construction fencing and flagging installed at least 165 feet outside the edge of the driplines of the elderberry plants during construction implementation, as needed.

Additionally, if full avoidance of the two elderberry shrubs in the development footprint is not possible, the project proponent has agreed to transplant the two shrubs using appropriate best management practices such as excavation of adequate root ball, preparation of properly sized hole, and backfill for transplantation (Service 2017). Because these shrubs are not considered habitat for the beetle, verification of long-term success beyond establishment of the two transplanted shrubs is not necessary.

After reviewing all available information, the Service concurs with your determination that the proposed project may affect, but is not likely to adversely affect the beetle. The proposed project reached the “may affect” level for the beetle, and the subsequent requirement for a biological assessment, since the project is within the range of the beetle, suitable habitat for the beetle exists within the proposed project, bore holes (without egg/larval galleries or frass) were observed on the northern cluster of elderberry shrubs located on a range between approximately 485–850 feet from work limits, and the beetle is known to occur nearby in riparian habitat approximately 1.40 miles south of the project site (Database 2023). Given that only two isolated elderberry shrubs exist within the project’s proposed ground disturbance footprint and are not suitable habitat for the beetle due to their location being over 2,625 feet from the nearest beetle occurrence, and that all of the remaining 11 elderberry shrubs will be avoided by the proposed project activities, along with other conservation measures proposed to avoid effects to the beetle, the Service believes that any potential effects from the proposed project to the beetle are so minimal in scale that they will be undetectable, and are therefore considered insignificant for the purposes of this consultation.

The remainder of this document provides our biological opinion on the effects of the proposed project on the tadpole shrimp and the fairy shrimp.

## **Consultation History**

- January 20, 2021:* The Service attended a pre-application meeting for the proposed project with the project proponent and the consultant.
- December 15, 2021:* The Service met virtually with the project proponent and the consultant for a pre-application follow-up meeting to review the updated site plans, large branchiopod survey results, and the section 7 consultation process for the proposed project.
- June 02, 2022:* The Service attended an interagency site meeting with the Corps, the project proponent, and the consultant regarding the proposed project and potential effects.
- July 07, 2022:* The Service attended a virtual meeting with the project proponent and their consultant to discuss mitigation for the proposed project.
- November 17, 2022:* The Service received email correspondence from the Corps containing a letter designating the U.S. Department of Agriculture as the lead Federal agency to act on their behalf for the purposes of compliance with section 7 of the Act.
- November 21, 2022:* The Service received the November 21, 2022, letter from the Rural Utilities Service requesting initiation of formal consultation along with the biological assessment via email.
- December 22, 2022:* This date confirms the receipt of the complete information for the formal consultation to begin.
- Feb–March 2023:* Ongoing communications between the Service and the project proponent regarding clarification of the proposed project description and effects analysis.
- June–July 2023:* Upon request by the project proponent, the Service provided a copy of the draft biological opinion via email to the project proponent for review. Discussion over compensatory mitigation options occurred between the Service and the project proponent, and the project proponent requested an addition to the proposed compensatory mitigation to include onsite and offsite preservation.

## **BIOLOGICAL OPINION**

### **Description of the Proposed Action**

The proposed project activities will consist of construction, operation, and eventual decommission of a new solar photovoltaic energy-generating and energy storage facility located in the Sloughhouse community of Sacramento County, California. The proposed facility footprint will be constructed within 371.72 acres and will be adjacent to an existing solar facility. At the end of the proposed project's life, which is anticipated to be 35 years, the proposed facility will be decommissioned. The purpose of the proposed project is to provide a renewable



source of electrical supply to the regional electric utility provider, Sacramento Municipal Utility District, under long term contracts to help meet California Renewables Portfolio Standard goals.

### *Background*

The site for the proposed project is located within eastern Sacramento County, approximately 18 miles southeast of the City of Sacramento, on property that is directly south of the Cosumnes River and within the Upper Cosumnes River watershed. General land use at the proposed project site is a mixture of rural residential areas, low density development, and open space composed of annual grassland and agricultural fields. The proposed project site is bordered on the south side by an existing unaffiliated solar facility, Dillard Road borders the southeast side, Meiss Road borders the northeast side, an agricultural area that abuts the Cosumnes River borders the north side of the site, and an existing ranch is adjacent to the southwest side of the site.

The proposed project site is located within the plan area of the South Sacramento Habitat Conservation Plan (Plan), and the proposed project site's location is identified in the Plan as a potential preserve. The Plan is a regional conservation plan intended to ensure the long-term viability of each covered species by mitigating the impacts of covered activities to each species through the implementation of a Plan Conservation Strategy (Service 2019). Because the proposed project is a solar development that is located outside of the Plan's Urban Development Area, it is not a covered activity under the Plan. Mitigation for the proposed project includes incorporating the existing avoidance and minimization measures from the Plan to ensure consistency with the Plan. During the technical assistance stage of the proposed project, the Service and Plan partners determined that the proposed project does not have a large enough impact on the Plan to necessitate further coordination with managers of the Plan (beyond the preliminary planning of the proposed project), and so the Plan will not be discussed further in this document.

### *Proposed Project Activities*

#### Initial Site Preparation

Construction access will occur primarily from Dillard and Meiss Roads, and multiple gate-restricted access points will be used during the construction period of the proposed project. During implementation of construction activities, a temporary construction trailer/office complex and staging area will be established onsite. Daily traffic generation during construction will be due to delivery of equipment and supplies and workforce commuting. The number of workers expected to be present onsite during the construction period will average up to 150 workers per day. Deliveries of equipment and supplies to the site will have the potential to range from 5 to 40 daily trips, with an average of approximately 10 trips per day during construction.

Site preparation will be planned and designed to minimize the amount of ground disturbance; however, grading will be necessary to accommodate the engineering tolerances of the new solar panels. Grading activities will consist of disc and roll compaction over the proposed solar development area. The hydrology design prioritizes protecting the new facility and the adjacent facilities from potential impacts of large storms.

New access roads will be constructed along the perimeters of the proposed solar development area. Low water crossings are anticipated to be used in areas where access roads intersect with known low volume aquatic resource features. A low water crossing will be compacted subgrade

and will have an aggregate base (i.e., armored surface) at grade. The access road will cross the aquatic resource as close to 90 degrees as possible. The project proponent will ensure appropriate subgrade elevation so that the finished access road surface will continue to allow water to flow through the aquatic resource channel unimpeded and without ponding upstream of the road or on the road surface. If it is determined that a culvert is necessary upon detailed final engineering (not currently anticipated), hydrologic modelling and coordination with Sacramento County would be completed to ensure that flow volumes downstream of the culverts are not impacted.

### Temporary Construction Facilities

During the construction period, temporary facilities will be installed within the proposed solar development area and may include construction trailers, temporary septic systems or holding tanks, parking areas, material receiving or storage areas, water storage ponds, construction power service, recycling and waste handling areas, and others. These facilities will be designated on the final site plan.

### New Solar Facility

Construction includes installation of new photovoltaic cells (main component of a solar panel) that make up photovoltaic modules (environmentally sealed collections of photovoltaic cells) that will be wired together to form photovoltaic arrays. The solar array field will be arranged in groups called blocks. The entire array block will be connected to an inverter and transformer station. Disconnect switches, fuses, circuit breakers, and other miscellaneous equipment will be installed throughout the proposed solar development area for the purposes of electrical protection, operations, and maintenance. The switchyard, transmission interconnection facilities, and energy storage facilities will be located at the substation, which will be constructed near the east side of the proposed solar development area's footprint near Dillard Road.

At full build-out, most of the proposed solar development area's footprint will be disturbed by construction activities (see Figure 1). Depending on the selected manufacturer, the photovoltaic modules will be mounted on fixed-tilt, single, or dual-axis tracking structures installed in the solar arrays. Fixed tilt arrays would be oriented in east-west rows and would be generally southern facing with a tilt angle between 10 and 35 degrees to maximize incidental solar radiation absorbed over the year. Single-axis trackers rotate  $\pm 60$  degrees (0 degrees is horizontal) along a general north-south axis as they track the sun throughout the day. Dual-axis trackers function similarly but on two axes that allow for more range. The project proponent anticipates the use of a single-axis tracker system for the proposed project. The structural support elements for the modules will be constructed out of corrosion-resistant steel, aluminum, or equivalent elements that are attached to I-beam posts approximately 8 inches in diameter. The I-beam posts will be driven directly into the prepared base grade of the facility development area ground at depths that are not anticipated to exceed 14 feet, depending on geotechnical conditions across the site. Because they will be driven directly into the prepared ground, the driven posts will not require the use of a concrete base.

Some grading will be necessary to accommodate the engineering tolerances of the solar panels. Grading will be minimized to the maximum extent practicable and is designed to maintain existing hydrologic flow patterns across the site; proposed direct grading avoids most of the aquatic features located within the solar development area. Water will be required for a variety of construction activities including dust suppression during grading and other onsite activities, earth compaction, the creation of engineered fill, and concrete preparation. Construction-phase water

demand will be greatest during site disc and roll compaction at the site. During the construction period, approximately 96 acre-feet of water will be used within the proposed solar development area for dust control and other construction activities. Use of onsite wells are anticipated as a water source for the proposed project activities; however, some water may need to be hauled onsite, depending on water needs in dry conditions.

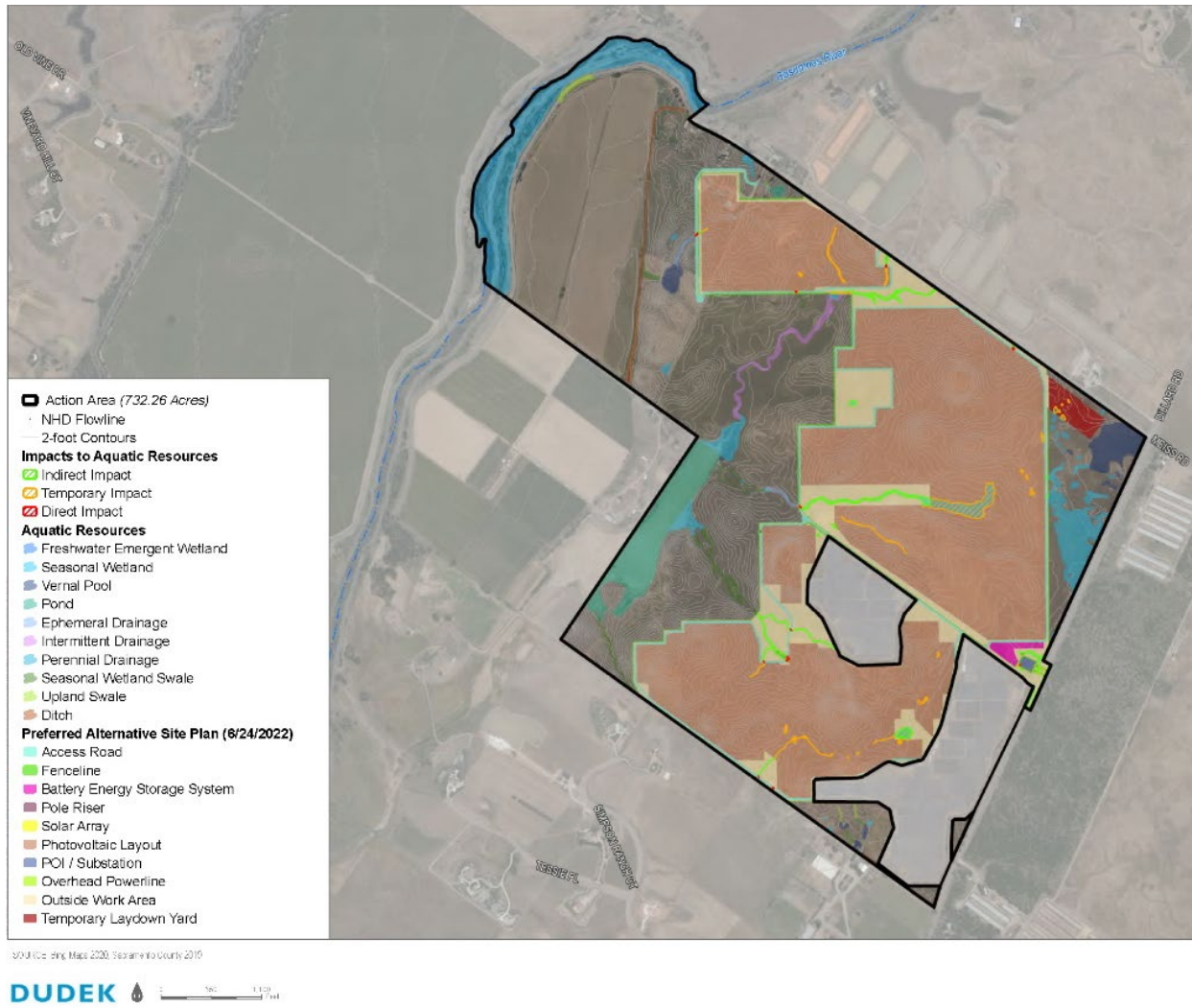


Figure 1 – Map of the action area with onsite aquatic resources labeled according to the applicant’s assessment of impacts (which differ from the Service’s final effects analysis). The proposed solar development area is shaded in brown. (Figure from biological assessment).

Construction Schedule, Facility Operation, Decommission

Proposed project construction activities will occur over a period of approximately 8 months. Local traffic will increase during proposed project implementation, but no impacts to traffic patterns are expected to result during operation of the solar facility once construction is complete. Typical construction work hours will be from 6:00 am to 4:00 pm, which is subject to change based on biological measures, overall construction timing, or worker safety such as avoidance of excessive midday heat. Work at night will occur occasionally within limited areas of the site.

Following completion of construction activities, perennial and annual vegetation beneath the solar arrays will be maintained and managed. For facility operations, the grassland throughout the completed solar development area will be converted to dryland pasture composed of a combination of grassland species and non-invasive forbs. Final site-specific seeding plans will be developed based on assessment of soil conditions, appropriate grassland species, and dietary preferences of sheep (utilized for vegetation management). The seeding plans will be designed to be self-perpetuating, to re-seed naturally. In preparation for seeding, any areas intended for revegetation that were compacted by construction will be de-compacted to not more than 12 inches depth on not less than 18-inch centers. Before seeding, ideally in fall before saturating rains, a disc and/or ring roller will be used to reduce the soil surface to a suitable planting medium. The site will likely be seeded using seed drills or broadcast seeding followed by light raking; hydroseeding and hydromulching may also be used depending on timing and site-specific conditions.

After completion of site restoration, vegetation management will be implemented during facility operation according to a grazing plan. The grazing plan includes quantifiable standards to ensure vegetation is maintained in a manner that ensures habitat function and value, along with ensuring associated sheep grazing activities are maintained during varying windows of time depending on annual rainfall, temperatures, and site-specific conditions (Dudek 2021). Upon completion of the proposed project, the project proponent anticipates the primary vegetation management strategy for the site will be grazing; however, mechanical mowing may be used if grazing partners are periodically not available during facility operations and to ensure vegetation management is not interrupted.

The existing network of fencing throughout the action area is wildlife-friendly and does not preclude overland movement. Proposed new perimeter fencing that will surround the completed solar development area will not impede movement of species such as birds, small to medium sized mammals (e.g., coyote, raccoon), and reptiles (e.g., snakes, lizards), and these animals will be able to pass over or through the proposed new fencing.

After completion of construction, water used during facility operation will be used primarily for dust control. During operation, water may also be used to wash the solar modules should this action be determined beneficial to the facility. The project proponent anticipates a water requirement of approximately 2 acre-feet per year during facility operation.

Because the proposed facility's end of life is after 35 years, describing the specific decommissioning activities would be somewhat speculative. However, it is anticipated that the best available technologies and management practices will be deployed to ensure successful decommissioning and site restoration at the proposed project site. A decommissioning plan was submitted to Sacramento County and to the Service, and it is anticipated that all applicable requirements will be followed at the time of project decommissioning. Decommissioning the proposed project facility will involve removal of the project's components as necessary for reuse of the site, including the solar panels, panel trackers, supports and mounts, batteries, inverters, transformers, electrical conductors, electrical cables, and substation components; removal of other structures; and the regrading of any areas significantly impacted by the removal of any components. Roads may be removed or left in place based upon the landowner's anticipated reuse after decommissioning. The decommissioning process will likely include updating the decommissioning plan to ensure that all pertinent regulations at the time of decommissioning are followed, and generally, as noted in the plan, the site will be restored to pre-construction land



uses including revegetation of the site. The footprint of decommissioning will be similar in scale to that of the proposed construction footprint.

### *Conservation Measures*

In addition to implementing standard best management practices (e.g., storm water pollution prevention and dust and erosion control), the project proponent proposes the following conservation measures, as outlined in the biological assessment, for the purpose of avoiding and minimizing effects to the tadpole shrimp and fairy shrimp. The conservation measures described below are considered part of the proposed action evaluated by the Service in this biological opinion.

- 1) Worker Environmental Awareness Training—The project proponent will assign a qualified biologist to conduct a Worker Environmental Awareness Program. The training will be prepared to educate staff on the presence of special-status species, habitats, and protected wetlands with potential to occur, or that are known to occur, within the action area. The program will describe their identification, habitat requirements, and penalties for species impacts, as well as immediate steps to take should special-status plant species be observed by staff onsite. This training will include biological resource requirements provided in agency permits or agreements, and any species-specific plans. The training can be provided in the form of a handout and/or video presentation. Staff that attend the training will fill out a sign-in sheet indicating that they completed the training.
- 2) Environmentally Sensitive Area Exclusions—The project proponent has agreed to containing all construction and operation activities within the proposed solar development area. The periphery of the solar development area will be clearly delineated so that no work occurs in the adjacent lands area. Buffers for aquatic resources and elderberry shrubs will be employed. For aquatic resource buffers that may be indirectly impacted within the solar development area, they will be returned to pre-existing conditions to the maximum extent practicable. Specifically, flagging, fencing (silt fence, orange safety barrier fence, or equivalent) will be installed for these buffer areas. All direct construction activities are prohibited within this buffer area unless approval is received to encroach on the buffer via formal consultation with the Service. Additionally, the project proponent has designed the proposed action to avoid impacts to the maximum extent feasible. The project proponent will install fencing, stakes/flagging, or other appropriate barriers (e.g., chain-link fence) between the active solar development area and the adjacent other lands to prevent inadvertent encroachment into sensitive habitat areas. The contractor will be responsible for maintaining the fence or other demarcation during construction and ensuring that no construction personnel, equipment, or runoff or sediment from the construction area enters environmentally sensitive areas. If total avoidance is achieved, no further action is required.
- 3) Construction Monitoring—The project proponent will assign a qualified biologist to conduct periodic monitoring (e.g., a minimum of once per week) during construction activities that involve ground disturbance (e.g., vegetation removal, grading, road construction) within the undeveloped portions of the proposed solar development area within the action area. The purpose of the construction monitoring is to verify that the avoidance and minimization measures are properly implemented to protect sensitive resources and that the proposed project complies with all applicable permit requirements and agency conditions of approval. The biologist will inspect the barrier fencing from

measure above, and any required exclusion fencing around environmentally sensitive areas regularly and will communicate any issues to the construction manager or construction manager's delegate.

- 4) Maintain Hydrology—To avoid indirect effects on wetland hydrology outside the proposed solar development area, the project proponent will ensure the proposed project is designed to maintain existing drainage patterns as they exist in the action area so there is no reduction or increase in existing surface water flow offsite into adjacent habitat.
- 5) Aquatic Resources Avoidance—The proposed project final plan will be designed to eliminate and reduce direct and indirect impacts to aquatic resources (i.e., federally listed branchiopod habitat) to the maximum extent possible. For direct and/or indirect impacts that cannot be avoided, the project proponent has proposed a compensatory mitigation framework, as detailed below, to ensure no net loss of species or habitat.
- 6) Compensatory Mitigation—To mitigate for impacts to acres of federally listed vernal pool branchiopod habitat, the project proponent will compensate by purchasing tadpole shrimp and fairy shrimp species preservation credits at a Service-approved conservation or mitigation bank. Alternative means such as Service-approved offsite or onsite preservation may also be utilized.

Direct and indirect effects to onsite suitable aquatic habitats that may support federally listed vernal pool branchiopods will be offset through the purchase of tadpole shrimp and fairy shrimp species preservation credits from a Service-approved conservation or mitigation bank at ratios of 3:1 for permanent effects, 2:1 for indirect effects, and 1:1 for temporary effects. To offset proposed project-related impacts to aquatic habitat, the project proponent has proposed to purchase a total of 8.63 tadpole shrimp and fairy shrimp species preservation credits. Alternative means such as Service-approved offsite or onsite preservation for all or a portion of the 8.63 acres may also be utilized.

### **Action Area**

The action area is defined in 50 CFR § 402.02, as “all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action.” For the proposed project, the action area encompasses 371.72 acres of the proposed solar development area as well as 360.54 acres of surrounding areas (adjacent other lands) that are adjacent to and outside of the proposed project's solar development area footprint. The action area totals 732.26 acres.

### **Analytical Framework for the Jeopardy Determination**

Section 7(a)(2) of the Act requires that federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species. “Jeopardize the continued existence of” means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species (50 CFR § 402.02).

The jeopardy analysis in this biological opinion considers the effects of the proposed federal action, and any cumulative effects, on the rangewide survival and recovery of the listed species. It relies on four components: (1) the *Status of the Species*, which describes the current rangewide

condition of the species, the factors responsible for that condition, and its survival and recovery needs; (2) the *Environmental Baseline*, which analyzes the current condition of the species in the action area without the consequences to the listed species caused by the proposed action, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the species; (3) the *Effects of the Action*, which determines all consequences to listed species that are caused by the proposed federal action; and (4) the *Cumulative Effects*, which evaluates the effects of future, non-federal activities in the action area on the species. The *Effects of the Action* and *Cumulative Effects* are added to the *Environmental Baseline* and in light of the status of the species, the Service formulates its opinion as to whether the proposed action is likely to jeopardize the continued existence of the listed species.

## **Status of the Species**

### *Tadpole Shrimp and Fairy Shrimp*

The status of the tadpole shrimp and the fairy shrimp have been assessed in the *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (Service 2005) (Recovery Plan) and subsequent 5-year reviews. For the most recent comprehensive assessment of the rangewide status of the tadpole shrimp, please refer to the *Vernal Pool Tadpole Shrimp (*Lepidurus packardii*) 5-year Review: Summary and Evaluation* (Service 2007a). For the most recent comprehensive assessment of the rangewide status of the fairy shrimp, please refer to the *Vernal Pool Fairy Shrimp (*Branchinecta lynchi*) 5-year Review: Summary and Evaluation* (Service 2007b). No change in either species' listing status was recommended in the 5-year reviews. Threats evaluated during the reviews and discussed in the final documents have continued to act on the species since the 2007 5-year reviews were finalized, with loss of habitat being the most significant effect.

While there have been continued losses of vernal pool habitat throughout the various recovery regions, including the Southeastern Sacramento Valley Recovery Region (as described in the Recovery Plan) where the proposed project is located, to date no project has proposed a level of effects for which the Service has issued a biological opinion of jeopardy for the species. The Service is in the process of finalizing its most current 5-year reviews for the species.

## **Environmental Baseline**

*Environmental baseline* refers to the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process. The consequences to listed species or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency's discretion to modify are part of the environmental baseline.

The proposed project is located in the Southeastern Sacramento Valley Vernal Pool Region (Region), as described in the Recovery Plan (Service 2005); however, the action area is not located within a Core Recovery Area within the Region. This Region contains approximately 16% of the remaining vernal pool grasslands in California's Central Valley, with the conversion of land through plowing, disking, or grading as the primary causes for vernal pool habitat loss in

this Region (Witham et al. 2014). Additionally, Sacramento County contains approximately 8% of remaining vernal pool grassland habitat in California's Central Valley (Witham 2021).

Land use that surrounds the action area is a mixture of industrial, agricultural, and rural residential including rural residences to the south, a caviar aquaculture farm to the north, intermittent orchards to the south and east, and a turkey farm to the east. The southeast portion of the action area contains an existing solar facility (Dillard Road Solar Power Facility), and the remainder is composed primarily of grassland used for cattle ranching. The portion of the Cosumnes River at the proposed project site is bounded by levees. Valley oak woodland encompasses the riparian habitat along the Cosumnes River, where valley oak (*Quercus lobata*) is the dominant overstory species, with intermittent shrubs and an herbaceous layer dominated by disturbance-tolerant upland species such as yellow star-thistle (*Centaurea solstitialis*) and introduced grasses. Interspersed throughout the action area are various types of seasonally inundated aquatic features that generally follow a drainage pattern in a westerly and southwesterly direction towards the river floodplain. Hydric soils associated with many onsite aquatic features, specifically onsite vernal pools, and seasonal wetlands and swales, are indicative of shallow perched water tables and are primarily composed of clayey alluvium profiles, including Galt clay and San Joaquin Galt complex, typical of basin floors and vernal pools with claypan/duripan restrictive layers. Soils associated with other onsite aquatic features, such as ephemeral ditches and drainages, and upland swales, are predominantly composed of hydric and nonhydric clayey or sandy loam profiles (Natural Resources Conservation Service 2022).

#### *Annual Grassland*

The action area contains relatively flat topography with a matrix of rolling hills and an elevation range between approximately 95 feet height above mean sea level on the western side to 160 feet above mean sea level on the eastern and southern sides. The dominant vegetation community of the action area is California annual grassland that includes species such as soft brome (*Bromus hordeaceus*), medusahead (*Elymus caput-medusae*), and narrow tarweed (*Holocarpha virgata*). Dominant vegetation surrounding the interspersed vernal pools and similar aquatic features includes hydrophytic species such as Great Valley eryngo or button celery (*Eryngium castrense*), prostrate knotweed (*Polygonum aviculare*), turkey tangle fog fruit (*Phyla nodiflora*), and bracted popcorn flower (*Plagiobothrys bracteatus*); as well as facultative grasses growing along the aquatic feature margins.

#### *Vernal Pool Shrimp Suitable Habitat*

The proposed project site is located within the tadpole shrimp and fairy shrimp's ranges and contains aquatic and upland habitat components for the species. Potentially suitable habitat within the action area includes onsite aquatic features that exhibit sufficient characteristics (e.g., sufficient depths, temperatures, and hydroperiod) to support the lifecycle of the tadpole shrimp or the fairy shrimp (see Wetland Delineation Report/Appendix E of Biological Assessment) (Service 2007a, 2007b). Aquatic features that are present within the action area total 69.75 acres, of which 42.67 acres are suitable habitat for the tadpole shrimp and fairy shrimp. Within the proposed solar development area and proposed staging area, there is a total 5.84 acres of suitable habitat for the tadpole shrimp and fairy shrimp. This suitable habitat includes the following: ephemeral drainage (0.74 acre), depression pond (0.38 acre), ephemeral ditch (0.15 acre), seasonal wetland (3.10 acres), seasonal wetland swale (0.71 acre), intermittent channel (0.45 acre), upland swale (0.07 acre), and vernal pool (0.25 acre). An existing large linear agricultural



irrigation system (center-pivot irrigation/sprinkler system) on the eastern field in the solar development area may have historically augmented portions of aquatic features located within this field (specifically, a larger seasonal wetland in the middle of the field; see Appendix A (enclosed) Figure 3, feature SW-24). However, even if the existing irrigation operations were to stop due to the proposed project, the ecological function of these features is expected to remain as seasonal wetlands.

Some of the aquatic features (primarily linear aquatic features such as ditch, channel, and swale) listed above extend outside of the proposed solar development area and into the “adjacent other lands” portion of the action area. Those features that extend outside of the proposed solar development area are as follows (with associated additional acreage that extends outside of the proposed solar development area): ephemeral ditch (0.19 acre), seasonal wetland (1.71 acre), seasonal wetland swale (0.78 acre), and intermittent channel (1.91 acres) (for specific details, see Figures 2–7 in Appendix A, see also Appendix F of the Biological Assessment). The additional acreage of suitable habitat that extends outside of the proposed solar development area and into the adjacent other lands totals 4.59 acres.

Suitable aquatic habitat is also located throughout the adjacent other lands of the action area, outside of the proposed solar development area. This additional suitable aquatic habitat includes a large vernal pool and smaller vernal pools near the Meiss and Dillard road intersection (Appendix A, Figure 3), seasonal wetlands, and seasonal wetland swales on the east and south ends of the action area (Appendix A, Figures 2, 3); seasonal wetland swales that connect to a large livestock pond on the west end of the action area (Appendix A, Figures 6, 7); and a vernal pool with surrounding seasonal wetland swales, a drainage ditch, and small livestock ponds on the north end (Appendix A, Figure 5, 6). An existing access road with powerlines that runs in a north/south orientation transects the northern portion of the action area and connects to existing housing, agricultural structures, and unpaved farm roads (Appendix A, Figures 5, 6). Existing wire fencing is in place around the perimeters of the onsite fields and access roads.

The consultant conducted both dry and wet season protocol-level surveys for listed large branchiopods (Service 2017) within the proposed solar development area. Dry season branchiopod surveys were conducted in October and November 2020, and survey results were negative for federally listed large branchiopods. Wet season branchiopod surveys were conducted every 14 days from February to April 2021. The wet season survey results were also negative for federally listed large branchiopods. However, one season of negative survey results does not preclude presence of federally listed large branchiopods at the proposed project site.

According to the California Natural Diversity Database (Database), the nearest observation of the tadpole shrimp was documented within the proposed solar development area (Database 2023) and there are designated critical habitat units within 5 miles of the action area, with the nearest being 1.3 miles southeast of the action area (Service 2006). The nearest known occurrence of the fairy shrimp is within 0.25 mile of the action area south of Meiss Road (Database 2023). There are various designated critical habitat units for the fairy shrimp within 5 miles of the action area, with the nearest being 1.3 miles southeast of the action area (Service 2006). Further, there are several additional occurrences of both the tadpole shrimp and fairy shrimp within 5 miles of the action area (Database 2023).

Because the proposed project is within the range of the tadpole shrimp and the fairy shrimp, suitable habitat for both species is present within the action area, both species are known to occur

nearby, and the tadpole shrimp has been historically observed onsite, it is reasonably likely that the tadpole shrimp and the fairy shrimp are present within the action area.

### **Effects of the Action**

*Effects of the action* are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action.

Effects on tadpole shrimp and fairy shrimp will occur through permanent and temporary impacts to the aquatic habitat and uplands within the 371.72-acre footprint of the proposed solar development area. The proposed project activities that will impact suitable habitat include fill placement associated with road crossings of aquatic features, grading of upland areas within the solar development area, fill associated with installation of new equipment, and mechanical driving of the new support pilings into the ground up to 14 feet below grade. The permanent fill proposed for placement within suitable aquatic habitat is 0.08 acre total and is associated with construction of the new substation facility (see Appendix A, Figure 3, features VP-11 and SW-23) and installation of new access roads (see all Figures, highlighted red crosshatch portions within proposed new access roads). Generally, aquatic features that are partially filled will undergo altered hydrology throughout the remaining portion of the feature, and therefore, the entire aquatic feature is considered permanently affected by the fill activity. Direct fill within onsite aquatic features for the proposed project is primarily associated with grading portions of the access road. These crossings are designed, however, to be low water crossings where the finished road surface will continue to allow water to flow through the aquatic resource channel unimpeded and without ponding upstream of the road or on the road surface. Boundaries of this suitable aquatic habitat will also be flagged or fenced (silt fence, orange safety barrier fence, or equivalent) and monitored for avoidance during construction. Because of this design and inclusion of avoidance measures, the 4.59 acres of suitable aquatic habitat that extends outside of the solar development area and is hydrologically connected to the 0.08 acre of fill is expected to remain suitable aquatic habitat. Additionally, a total of 0.07 acre of suitable aquatic habitat within the solar development area will be subject to grading (see Appendix A, Figure 3, features SW-25, SW-26, and SW-27), and so we assume these features will also be permanently lost as a result of proposed project activities.

Effects caused by construction staging on the aquatic features that are within the proposed staging area located on the eastern side of the proposed project site (Appendix A, Figure 2, features SW-01, SW-02, SW-03, SW-05) will be minimized through use of flagging, silt fencing placed around aquatic feature boundaries, and an onsite biological monitor during implementation of proposed project activities. These actions will minimize impacts from construction equipment, such as rutting or possible crushing of branchiopod eggs within the 0.12 acre of suitable aquatic habitat in the staging area. The uplands in the staging area that are directly adjacent to the suitable aquatic habitat will be subject to soil compaction, possible rutting, and impacts associated with construction machinery and equipment. However, this area will be restored to preexisting conditions after completion of construction and so the effects to suitable habitat in the staging area will be temporary.

Assuming the final proposed grading plans remain the same as those provided in the biological assessment, the remaining 5.57 acres of suitable aquatic habitat within the solar development

area will not be graded; but these features will be subject to direct disturbance, soil compaction, and crushing of eggs from temporary offroad vehicles during construction (Appendix A, Figures 2–4). Upon completion of construction, these temporarily impacted features will be regraded where needed to ensure continued hydrologic connectivity and will be reseeded with a native plant seed mix to ensure continuance of ecological function throughout the solar development area (see Agricultural Management Plan for the Sloughouse Solar Project).

The proposed project was designed to avoid direct ground disturbance to the aquatic features located outside of the solar development area near the Meiss and Dillard Roads intersection (and outside of the temporary staging area) although ground disturbance will occur within 250 feet of these features within the solar development area to the west (Appendix A, Figure 3, features VP-01–VP-04, VP-10, SWS-01, SW-04, SW-06, SW-08, SW-19, SW-21). We expect minimal effects will occur to these features because these aquatic features are within a topographically higher area than the areas to the west—the aquatic features are within an elevation range between 138 to 144 feet above mean sea level and gradually slope to a range of 131 to 140 feet above mean sea level directly west and closer to the proposed solar development footprint. General hydrologic patterns are expected to flow downgradient and follow the general patterns of the remaining action area’s flow towards the river, and so ground disturbance that occurs west of the aquatic features is not expected to substantially alter these features’ hydrology. The use of dust and erosion control and other best management practices such as implementation of a storm water pollution prevention plan, and exclusion of environmentally sensitive areas during the entirety of the proposed project construction period, paired with maintenance of existing drainage and hydrologic patterns across the action area, will further minimize impacts. Any portion of new perimeter fencing proposed for placement near these adjacent aquatic features will be routed to avoid impacts to each resource.

The aquatic features that are located near Cosumnes River outside of and adjacent to the western end of the facility footprint are directly adjacent to an existing access road, existing agricultural structures, and a working ranch (Appendix A, Figures 5–7, features SWS-03, SW-10, ED-03, VP-05, SWS-02, SW-39), and so the hydrologic flow pattern to these aquatic features have already been disrupted by previous fill activities associated with the road and structures. For example, a vernal pool is present within the adjacent other lands directly west of the existing access road and west of the proposed solar development area (feature VP-05; Figures 5, 6). A northern portion of a connecting ephemeral ditch will be impacted by the proposed project access road and grading activities (Figure 5, feature ED-03). However, we do not expect hydrology at this feature to be substantially altered by the proposed project activities because this pool is already surrounded by hydrologic barriers on the east and north sides, a seasonal wetland swale connects the pool to an irrigation channel west of the pool, an onsite biological monitor will be used during implementation of proposed project activities, flagging will avoid delineated aquatic features, and silt fencing will be placed around aquatic feature boundaries.

Construction activities associated with the proposed project will result in the permanent loss of 0.15 acre of suitable aquatic habitat due to direct fill or grading of wetland features. Any tadpole shrimp or fairy shrimp eggs in the soil will be crushed by heavy equipment during construction, and any surviving tadpole shrimp or fairy shrimp eggs will not be able to hatch due to the permanent loss of the wetland features within the proposed solar development facility. Another 5.69 acres of suitable aquatic habitat will be temporarily affected by construction activities that may result in crushing of tadpole shrimp and fairy shrimp eggs, soil compaction, and other disturbance.

Grading, soil compaction, erosion, dust, and sedimentation from construction activities can also impact fairy shrimp and tadpole shrimp habitat by altering hydrology, water quality, or soil conditions outside of areas of direct ground disturbance. The proposed project timeline is eight months, so it is likely to include at least some of the wet season. Rain events could cause erosion or sedimentation later in time after construction is completed; however, maintenance of hydrological flow onsite and implementation of the stormwater best management practices are expected to minimize adverse effects to aquatic habitat.

Upon completion of construction, a total of 0.47 acre of suitable habitat within the footprint of proposed solar panel arrays will also be affected by shading from solar panels. Shading from newly constructed solar panels could affect the composition and structure of the annual grassland and inhabiting species throughout the aquatic features and surrounding uplands. Subsequent impacts from shading could include changes in soil temperature, vegetative cover, species composition, and hydroperiod in the proposed solar development area footprint. Preliminary analysis by the consultant indicates that the proposed project will result in approximately 77% of ground shading by newly constructed solar panels, which would leave 23% open ground on average. Shading from newly installed solar panels, combined with excess water from occasional panel washing, could contribute to increased soil moisture retention within and downslope of the solar panel arrays. Shading could also contribute to cooler soil and water temperatures during the growing season and during daylight hours than is typical for the area. Additionally, construction equipment could potentially introduce or spread grassland plant species and noxious weeds throughout the solar development area which could, in turn, lead to a shift in vegetation composition.

Both fairy shrimp and tadpole shrimp eggs require cool water temperatures, generally below 50 degrees Fahrenheit, to hatch. Hatched fairy shrimp can reach maturity and reproduction in as few as 18 days, with a mean of 39.7 days, and are known to die off when water temperatures reach approximately 75 degrees Fahrenheit. In larger pools that hold water for longer durations, fairy shrimp eggs can hatch multiple times under optimal water temperatures (Service 2007a). Tadpole shrimp can take between three to four weeks to mature to reproduction age and can inhabit waters with temperatures up to 84 degrees Fahrenheit (Service 2007b). A change in vegetation composition within the proposed project's action area could potentially impact the tadpole shrimp and fairy shrimp by altering plant species compositions within the onsite vernal pools and aquatic habitat, which could in turn alter the water holding capacities of these features. Both shrimp species are highly adapted to the environmental conditions of their ephemeral habitats but require specific abiotic conditions to complete their life cycles. If the water holding capacity of aquatic habitat within the action area is reduced due to increased plant growth and water intake within the habitat, then fairy shrimp or tadpole shrimp may die off before reproducing.

Based on an analysis conducted by the Service for a similar solar development project, we assume that the onsite grassland species composition will shift slightly towards more shade tolerant plant species once the proposed construction activities are completed (Service 2011). Implementation of regular vegetation management (via grazing) throughout the proposed project's lifetime is expected to offset substantial shifts in vegetation composition in the solar development area and help maintain and possibly improve water-holding capacity within and outside of the onsite aquatic habitat. Within vernal pool ecosystems, increased or sufficient water storage is thought to contribute to improved ecosystem function by reducing the potential encroachment of exotic invasive plants; a recent study has shown that exotic invasive grasses and forbs were more closely associated with vernal pools excluded from grazing, while native forbs



and rushes were more closely associated with regularly grazed vernal pools (Michaels et al. 2022).

A total of 0.47 acre of suitable aquatic habitat for the tadpole shrimp and fairy shrimp in the solar panel array footprint within the proposed solar development area will be affected by permanent shading caused by the proposed project. Due to the many abiotic factors involved, it is difficult to accurately predict vegetative response to shading imposed by the solar panels upon completion of construction. But, with a proposed vegetation management plan and maintained hydrologic flow throughout the project site, we expect effects associated with shading throughout the new solar development area and potential vegetation community shifts to tadpole shrimp and fairy shrimp to be relatively low and the remaining and restored annual grassland community to continue to provide suitable aquatic and upland habitat for the tadpole shrimp and fairy shrimp.

### *Compensatory Mitigation*

As noted previously in the *Description of the Proposed Action* section, the project proponent has also proposed a conservation measure with the commitment to provide compensatory habitat as a condition of the action. This compensatory habitat is intended to minimize the proposed project's effect on the tadpole shrimp and fairy shrimp that will result from the permanent and temporary loss of habitat as described above. The proposed compensatory habitat will be in the form of purchasing 8.63 vernal pool preservation credits (in acres of habitat) for tadpole shrimp and fairy shrimp offsite at a Service-approved vernal pool conservation or mitigation bank. Alternative means such as Service-approved offsite or onsite preservation may also be utilized. This component of the action will have the effect of protecting and managing lands for the species' conservation in perpetuity. The compensatory lands will provide suitable habitat for breeding, feeding, or sheltering commensurate with or better than habitat lost as a result of the proposed project. Providing this compensatory habitat as part of a relatively large, contiguous block of conserved land may contribute to other recovery efforts for the species.

### **Cumulative Effects**

Cumulative effects include the effects of future State, Tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. During this consultation, the Service did not identify any future non-federal actions that are reasonably certain to occur in the action area of the proposed project.

### **Conclusion**

After reviewing the current status of the fairy shrimp and the tadpole shrimp, the environmental baseline for the action area, the effects of the proposed Sloughhouse Solar Project, and the cumulative effects, it is the Service's biological opinion that the Sloughhouse Solar Project, as proposed, is not likely to jeopardize the continued existence of the fairy shrimp and the tadpole shrimp. The Service reached this conclusion because the project-related effects to the species, when added to the environmental baseline and analyzed in consideration of all potential cumulative effects, will not rise to the level of precluding recovery or reducing the likelihood of survival of the species based on the following:

- 1) The acreage of habitat that will be affected by the proposed project represents a very small portion of habitat available in the Southeastern Sacramento Valley Recovery Unit; and,
- 2) the compensatory habitat proposed will ensure that habitat for the fairy shrimp and the tadpole shrimp will be protected and managed in perpetuity.

### **INCIDENTAL TAKE STATEMENT**

Section 9 of the Act and federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by Service regulations at 50 CFR 17.3 as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the same regulations as an act which actually kills or injures wildlife. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary and must be undertaken by Rural Utilities Service so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, for the exemption in section 7(o)(2) to apply. The Rural Utilities Service has a continuing duty to regulate the activity covered by this incidental take statement. If the Rural Utilities Service (1) fails to assume and implement the terms and conditions or (2) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Rural Utilities Service or project proponent must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR §402.14(i)(3)].

#### **Amount or Extent of Take**

##### *Vernal Pool Tadpole Shrimp and Vernal Pool Fairy Shrimp*

The Service anticipates that incidental take of the fairy shrimp and the tadpole shrimp will be difficult to detect because it is not possible to know how many eggs are in the soil of any wetland feature at a given time, or how many individuals or eggs will occupy any wetland later in time. Any fill of wetland features that results from the proposed project activities will cause harm and mortality of eggs inhabiting these features. There is a risk of harm, injury, and mortality as a result of the proposed construction activities, and the permanent and temporary loss or degradation of suitable habitat within the solar development area footprint. Incidental take of the tadpole shrimp and fairy shrimp in the form of mortality will result from the fill or grading of 0.15 acre of suitable habitat. Incidental take of the tadpole shrimp and fairy shrimp in the form of degradation of 0.47 acre of suitable habitat will result from shading by the panels in the solar

development area. An additional 5.69 acres of suitable habitat will be temporarily impacted by construction vehicles and equipment. The life stage affected by this action will be the tadpole shrimp's and the fairy shrimp's eggs, which are embedded in the soil and are difficult to detect without a detailed microscopic analysis. In instances in which the total number of eggs anticipated to be taken cannot be determined, the Service may use the acreage of habitat impacted as a surrogate for the take of eggs. Therefore, the Service anticipates take incidental to the proposed action as the lethal harm of all tadpole shrimp and fairy shrimp, including their eggs, within 0.15 acre of aquatic features that will be permanently affected by direct fill or grading, as well as the degradation of 0.47 acre of suitable habitat that will be permanently affected by shading. Additionally, we anticipate incidental take in the form of injury and mortality of a portion of the tadpole shrimp and fairy shrimp eggs within the 5.57 acres of habitat that are subject to crushing from temporary vehicle disturbance.

Upon implementation of the following reasonable and prudent measures, incidental take of the tadpole shrimp and fairy shrimp associated with the Sloughhouse Solar Project will become exempt from the prohibitions described in section 9 of the Act. No other forms of take are exempted under this opinion.

### **Effect of the Take**

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species.

### **Reasonable and Prudent Measures**

All necessary and appropriate measures to avoid or minimize effects on the tadpole shrimp and fairy shrimp resulting from implementation of this project have been incorporated into the project's proposed conservation measures. Therefore, the Service believes that following reasonable and prudent measure is necessary and appropriate to minimize incidental take of the tadpole shrimp and fairy shrimp:

- 1) All conservation measures, as described in the biological assessment and restated here in the *Description of the Proposed Action* section of this biological opinion, shall be fully implemented and adhered to. Further, this reasonable and prudent measure shall be supplemented by the terms and conditions below.

### **Terms and Conditions**

In order to be exempt from the prohibitions of section 9 of the Act, the Rural Utilities Service must ensure compliance with the following terms and conditions, which implement the reasonable and prudent measure described above. These terms and conditions are nondiscretionary.

- 1) Rural Utilities Service and the Corps shall include full implementation and adherence to the conservation measures as a condition of any permit or contract issued for the proposed project.
- 2) Rural Utilities Service will provide the Service's Sacramento Fish and Wildlife Office, Sacramento Valley Division Supervisor, with a copy of the completed bill of sale and payment receipt upon the purchase of all credits at a Service-approved conservation or mitigation bank and/or the applicant will develop Service-approved onsite or offsite

permittee-responsible mitigation which will include the following: a Service-approved and signed as to form conservation easement, a Service-approved long term management plan and fully funded endowment..

- 3) In order to monitor whether the amount of extent of incidental take anticipated from implementation of the proposed project is approached, Rural Utilities Service will adhere to the following reporting requirement.
  - a. For those components of the action that will result in habitat degradation or modification whereby incidental take in the form of harm is anticipated, Rural Utilities Service shall provide to the Service a precise accounting of the total acreage of habitat impacted after completion of construction.

### **CONSERVATION RECOMMENDATIONS**

Section 7(a)(1) of the Act directs federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The Service recommends the following actions:

- 1) Observations of listed species should be submitted to the California Natural Diversity Database within 60 days of observation.
- 2) Rural Utilities Service should work with the Service to assist in meeting the goals of the Recovery Plan for tadpole shrimp and fairy shrimp as outlined in the *December 2005, Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (Service 2005).

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

### **REINITIATION—CLOSING STATEMENT**

This concludes formal consultation on the Sloughhouse Solar Project. As provided in 50 CFR §402.16(a), reinitiation of consultation is required and shall be requested by the federal agency or by the Service where discretionary federal involvement or control over the action has been retained or is authorized by law, and:

- 1) If the amount or extent of taking specified in the incidental take statement is exceeded;
- 2) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered;
- 3) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion or written concurrence; or



- 4) If a new species is listed or critical habitat designated that may be affected by the identified action.

If you have any questions regarding this biological opinion, please contact Emma Bickerstaff, Fish and Wildlife Biologist (emma\_bickerstaff@fws.gov) at (916) 414-6577 or by email, or Megan Cook, Sacramento Valley Division Supervisor (megan\_cook@fws.gov), by email, at (916) 414-6492, or at the letterhead address.

Sincerely,

Kim S. Turner  
Acting Field Supervisor

Enclosure

cc:

Dylan Wood, California Department of Fish and Wildlife, Sacramento, California

Morgan Kennedy, Dudek, Sacramento, California

Matt Hirkala, U.S. Army Corps of Engineers, California Delta Section, Sacramento, California

William Risse, D.E. Shaw Renewable Investments, New York, New York

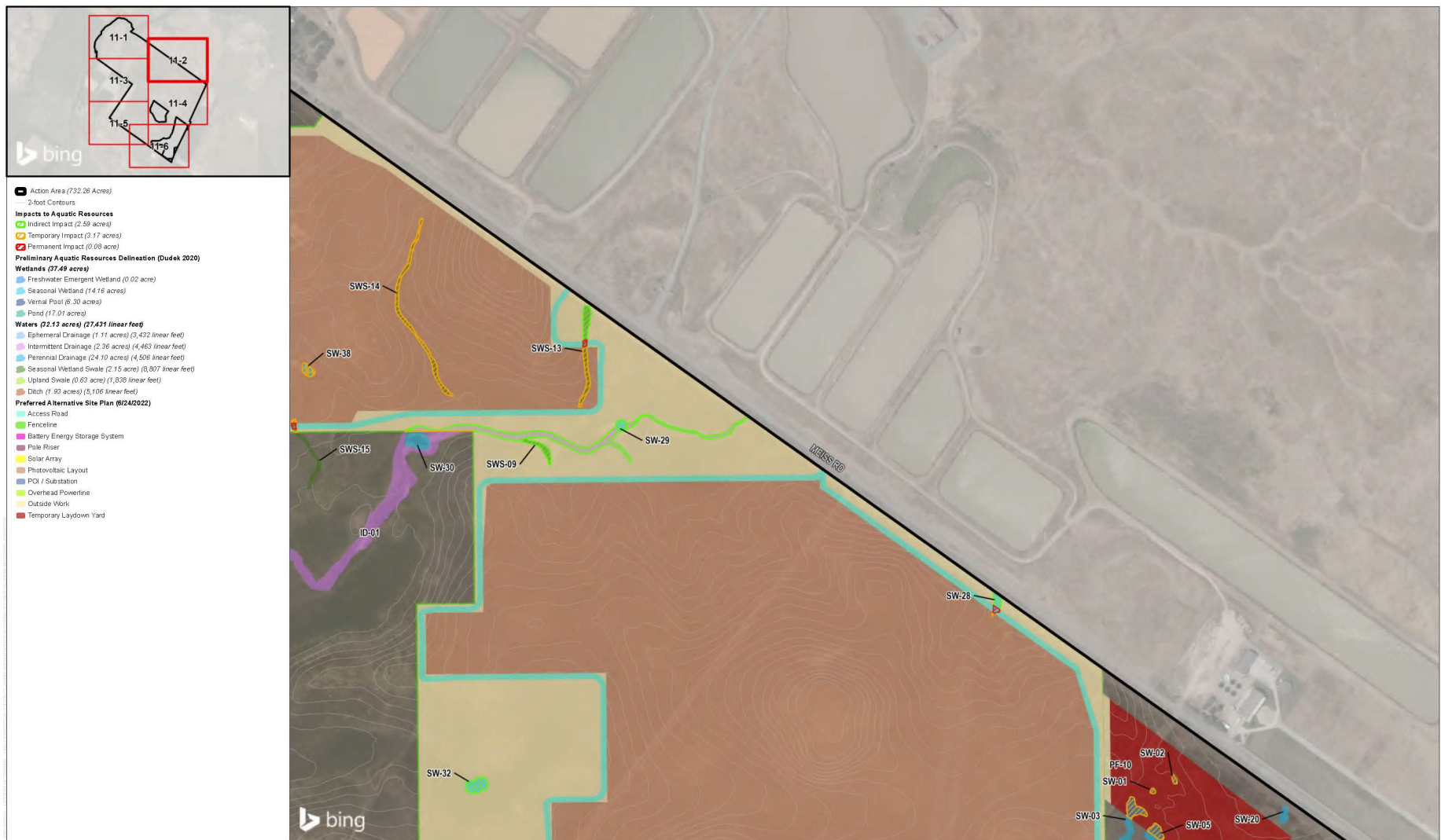
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# Appendix A



SOURCE: Bing Maps 2020, Sacramento County 2019



FIGURE 12-2

Effects Analysis- Impacts on Aquatic Resource Habitats  
Biological Assessment for the Sloughhouse Solar Project

Figure 2 – Map of the northeast portion of the action area along Meiss Road and onsite aquatic resources. Figure includes most of the proposed staging area (dark red color). (Figure from biological assessment.)



# Appendix A

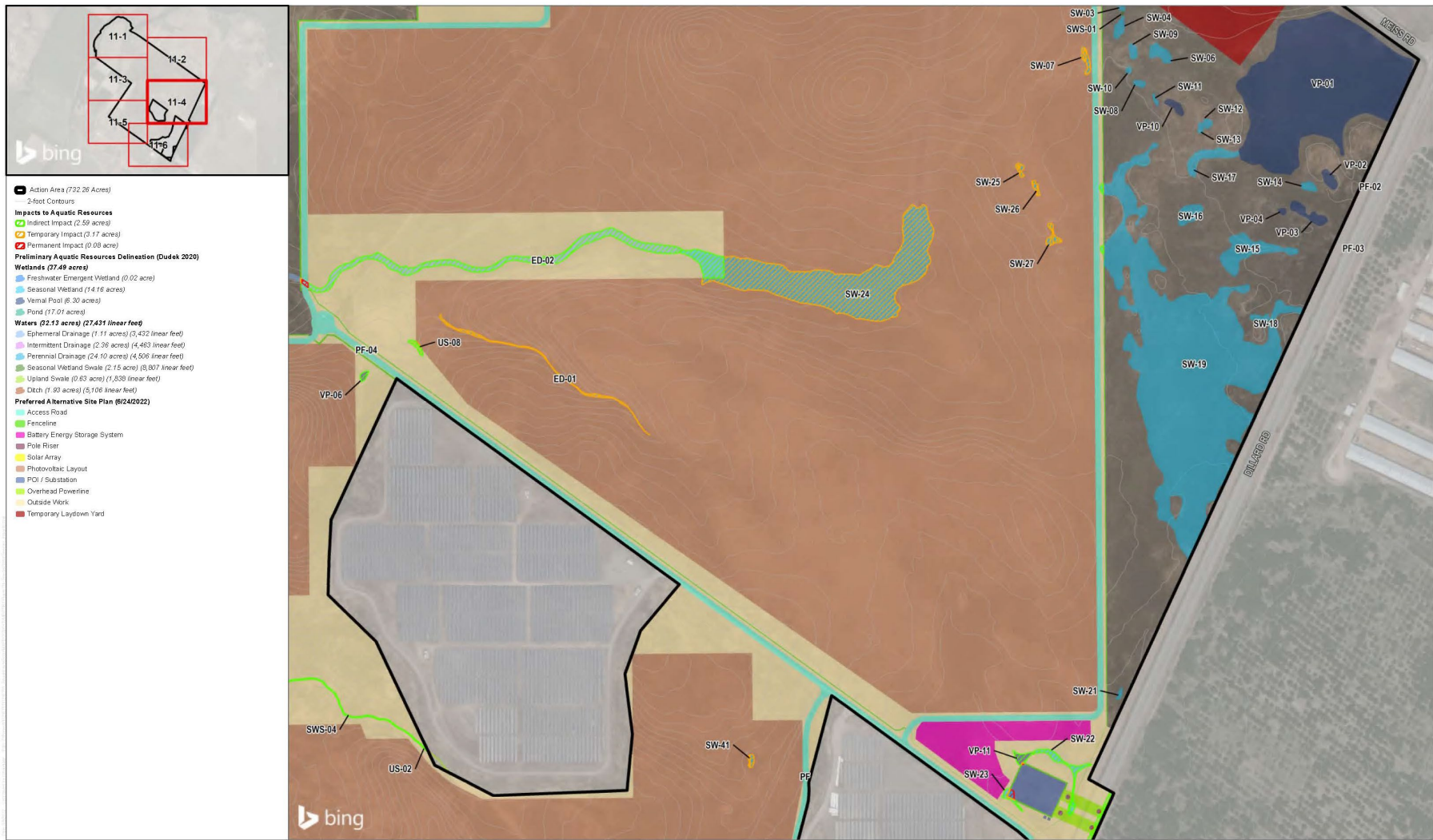
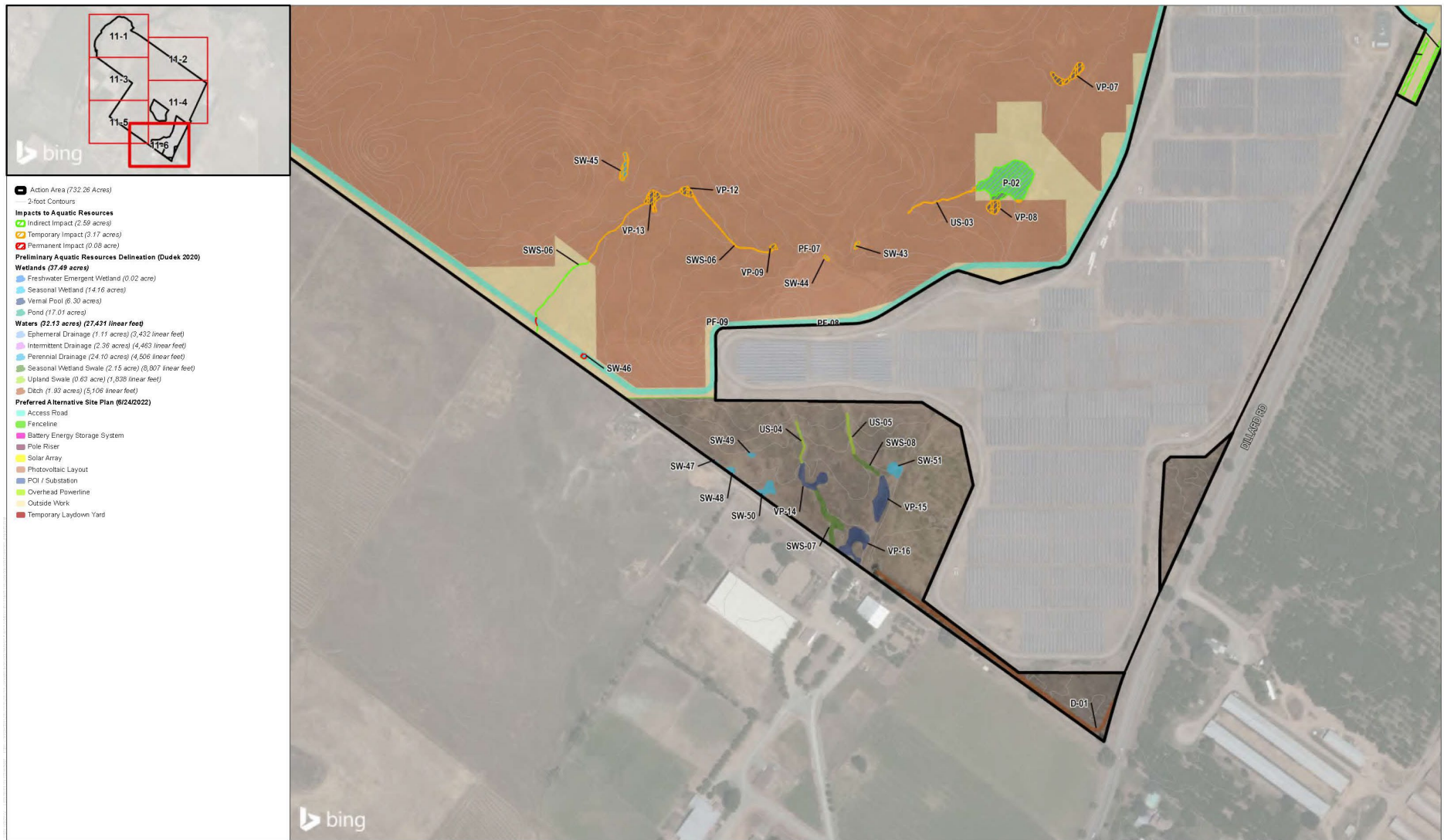


FIGURE 12-4

Effects Analysis- Impacts on Aquatic Resource Habitats  
 Biological Assessment for the Sloughhouse Solar Project

Figure 3 – Map of the eastern side of the action area onsite aquatic resources at Meiss and Dillard Road intersection shown. Figure includes the southern end of the proposed staging area (dark red color) and the proposed substation (purple color) in the southeast portion of the map. (Figure from biological assessment.)

# Appendix A



SOURCE: Bing Maps 2020, Sacramento County 2019



FIGURE 12-6

Effects Analysis- Impacts on Aquatic Resource Habitats  
Biological Assessment for the Sloughhouse Solar Project

Figure 4 – Map of the southern end of the action area with onsite aquatic resources. (Figure from biological assessment.)



# Appendix A



SOURCE: Bing Maps 2020, Sacramento County 2019



FIGURE 12-1

Effects Analysis- Impacts on Aquatic Resource Habitats

Biological Assessment for the Sloughhouse Solar Project

Figure 5 – Map of the northwest end of the action area with onsite aquatic resources. The Cosumnes River borders this portion of the action area. (Figure from biological assessment.).

# Appendix A



SOURCE: Bing Maps 2020, Sacramento County 2019



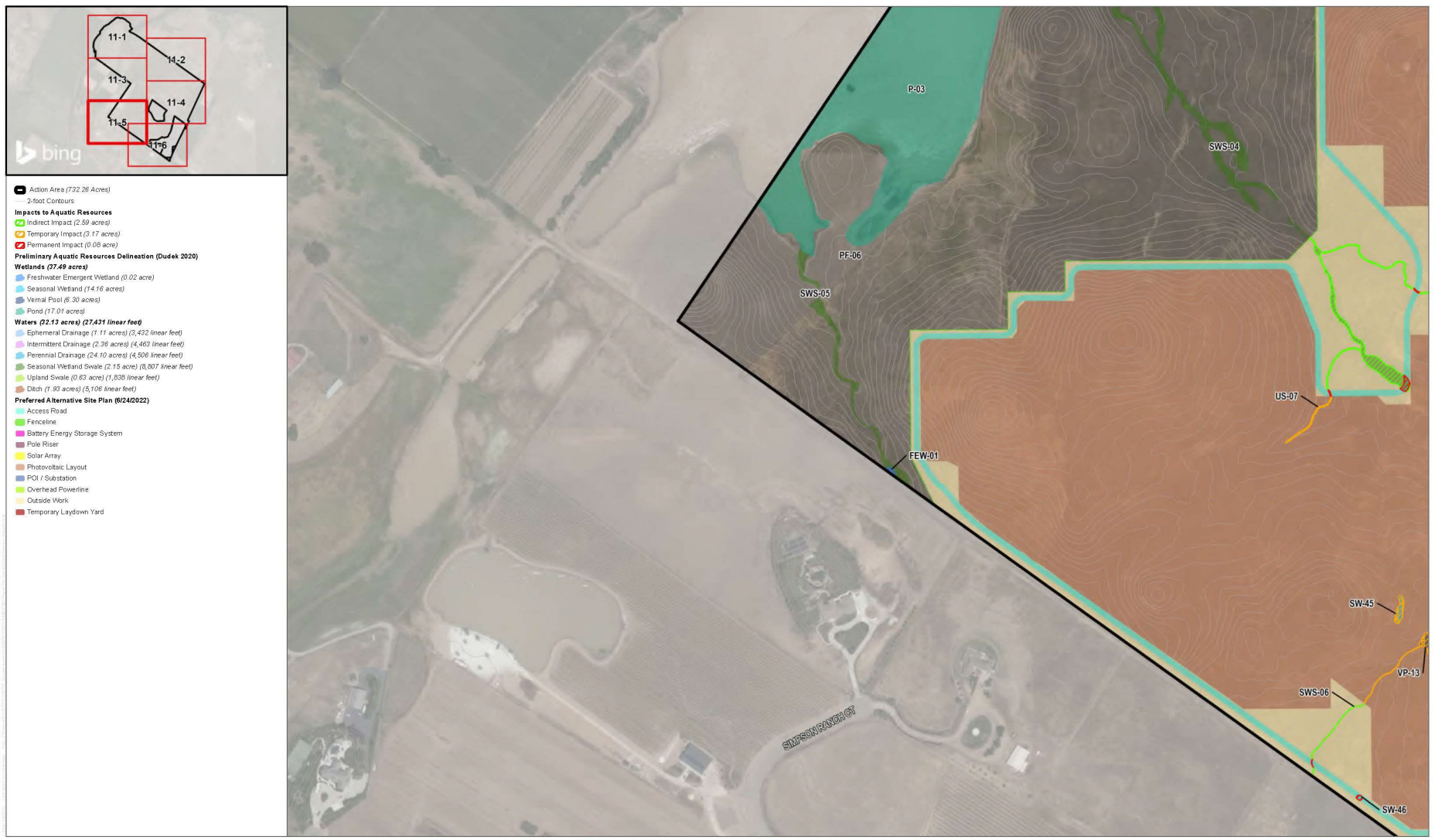
FIGURE 12-3

Effects Analysis- Impacts on Aquatic Resource Habitats  
 Biological Assessment for the Sloughhouse Solar Project

Figure 6 – Map of the west end of the action area and onsite aquatic resources. (Figure from biological assessment.)



# Appendix A



SOURCE: Bing Maps 2020, Sacramento County 2019



**FIGURE 12-5**  
 Effects Analysis- Impacts on Aquatic Resource Habitats  
 Biological Assessment for the Sloughhouse Solar Project

Figure 7 – Map of the southwest end of the action area and onsite aquatic resources. This portion of the action area is adjacent to a working ranch. (Figure from biological assessment.)